DAEWOO

Service Manual

PORTABLE AM/FM RADIO CASSETTE RECORDER

Model : ARS-201A

DAEWOO ELECTRONICS CO., LTD.
OVERSEAS SERVICE DEPT.

WARNING: TO PREVENT FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

THIS SYMBOL IS INTENDED TO ALERT THE USER TO THE PRESENCE OF UNINSULATED "DANGEROUS VOLTAGE" WITHIN THE PRODUCT'S ENCLOSURE THAT MAY BE OF SUFFICIENT MAGNITUDE TO CONSTITUTE A RISK OF ELECTRIC SHOCK TO PERSONS.

THIS SYMBOL IS INTENDED TO ALERT THE USER TO THE PRESENCE OF IMPORTANT OPERATING AND MAINTENANCE (SERVICING) INSTRUCTIONS IN THE LITERATURE ACCOMPANYING THE APPLIANCE.

CAUTION

TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS POLARIZED AC PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

CAUTION : TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

ATTENTION : POUR ÉVITER LES CHOCS ÉLECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU'AU FOND.

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■ CASSETTE DECK (PE-21V)

1. SPECIFICATIONS

A. DESCRIPTION

PORTABLE RADIO STEREO SINGLE CASSETTE RECORDER

B. VARIATION

1. USA/CANADA-UL/C-UL, 2 BAND TUNER
3. CONTINENTAL EUROPE-CE/LVD, 3 BAND TUNER
4. SOUTH AMERICA - 2 BAND TUNER

C. FEATURES

1. TUNER

FREQ. RANGE	: AM 520-1710KHz (USA) : 520-1620KHz (EUROPE) : FM 87.5-108MHz : LW 146-281kHz – OPTION : SW 6-18MHz – OPTION
ANTENNA	
AM (MW)/LW	: FERRITE BAR ANT
FM	: 75Ω ROD ANT

2. CASSETTE (RECORD/PLAYBACK)

FUNCTION : RECORD, PLAY, REW, FF, STOP/EJECT, PAUSE
SEMI-AUTO STOP
ONE TOUCH RECORDING
BUILT-IN ALC
SOFT EJECT DOOR
DC BIAS/MAGNET ERASE AC BIAS – OPTION
BUILT-IN CONDENSOR MIC
AUTO REVERSE – OPTION

3. CONTROLS/SWITCHES

TAPE (RADIO OFF)/RADIO	: SLIDE
BAND SELECTOR – 2 BAND	: SLIDE (AM/FM/FM STEREO)
TUNING	: THUMB WHEEL
VOLUME	: SLIDE
DUAL VOLTAGE SELECTOR	: SLIDE (OPTION)

4. INDICATORS

FM STEREO	: LED X 1 (RED)
AUTO REVERSE	: LED X 2 (GREEN) – OPTION

5. EXTERNAL CONNECTIONS

AC SOCKET	: TYPE (DEPENDING ON SAFETY REQUIREMENT
EARPHONE JACK	: 3.5mm ø

6. POWER OUTPUT

AC	: 650mW AT 10% THD/CH
DC	: 450mW AT 10% THD/CH

7. POWER SOURCE/SAFETY
USA/CANADA-120V/60Hz, UL/C-UL
EUROPE-CONTINENTAL – 230V/50Hz, CE/LVD
SOUTH AMERICA – 220V/60Hz, BRAZIL – 117~127/220V + /-10% 60Hz
BATTERY – 6V (4 X "C" SIZE/UM-2)

8. SPEAKER
3" FULL RANGE/4Ω

9. DIMENSIONS
362 (W) X 120 (H) X 123 (D) mm

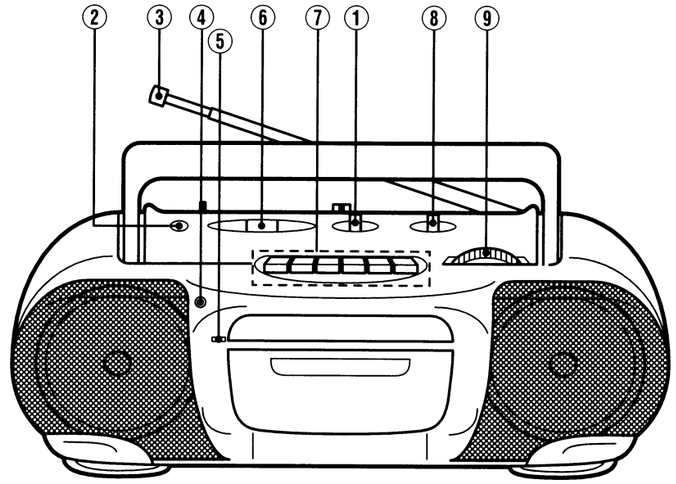
10 WEIGHT
1.7kg

D. ACCESSORIES
INSTRUCTON MANUAL
DETACHABLE AC CORD
AC PLUG ADAPTOR – OPTIONAL

E. PACKING
EACH SET IN GIFTBOX WITH POLYFOAM ENDCAPS
8 SETS PER MASTER CARTON

2. CONTROLS AND INDICATORS

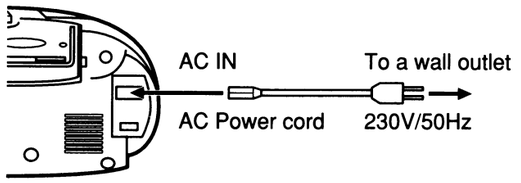
PARTS IDENTIFICATION



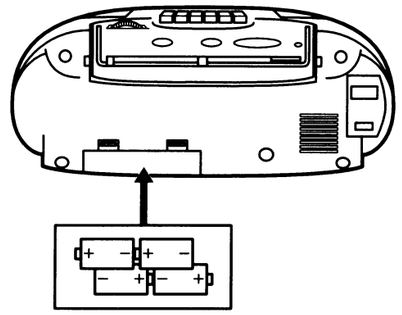
① FM ROD ANTENNA
② HEADPHONE JACK
③ MICROPHONE
④ FM STEREO INDICATOR
⑤ VOLUME CONTROL
⑥ TAPE OPERATION BUTTONS
II PAUSE
■▲ STOP/EJECT
◀◀ FFWD
▶▶ REWIND
▶ PLAY (PLAYBACK)
● RECORD
⑦ FUNCTION (Radio Off-Tape/Radio) SELECTOR
⑧ BAND (AM/FM/FM STEREO) SELECTOR
⑨ TUNING KNOB

POWER SOURCES

AC OPERATION
Plug the power cord into an AC outlet having 230V, 50Hz only.
NOTE :
The unit cannot be operated on the internal batteries when the AC power cord is connected to the unit.

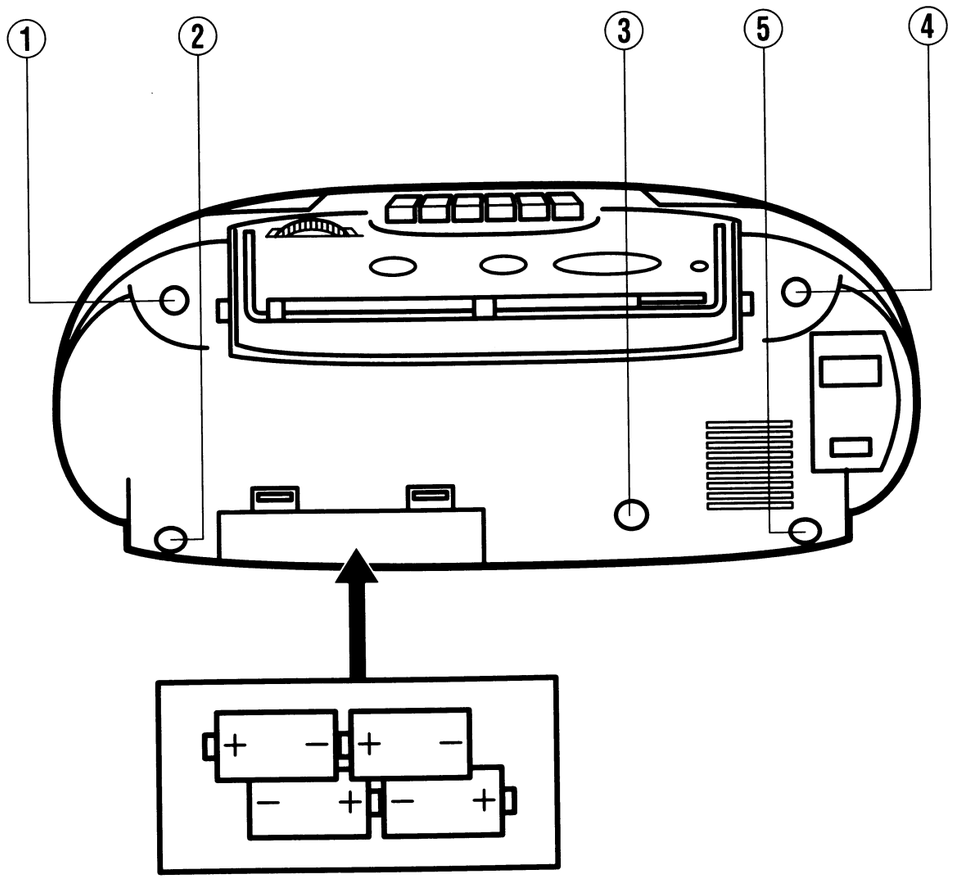


BATTERY OPERATION
1. Open the battery compartment cover.
2. Insert four C-size (UM-2, R14) batteries in the battery compartment and make sure the proper polarities are maintained.
3. Close the battery compartment cover.



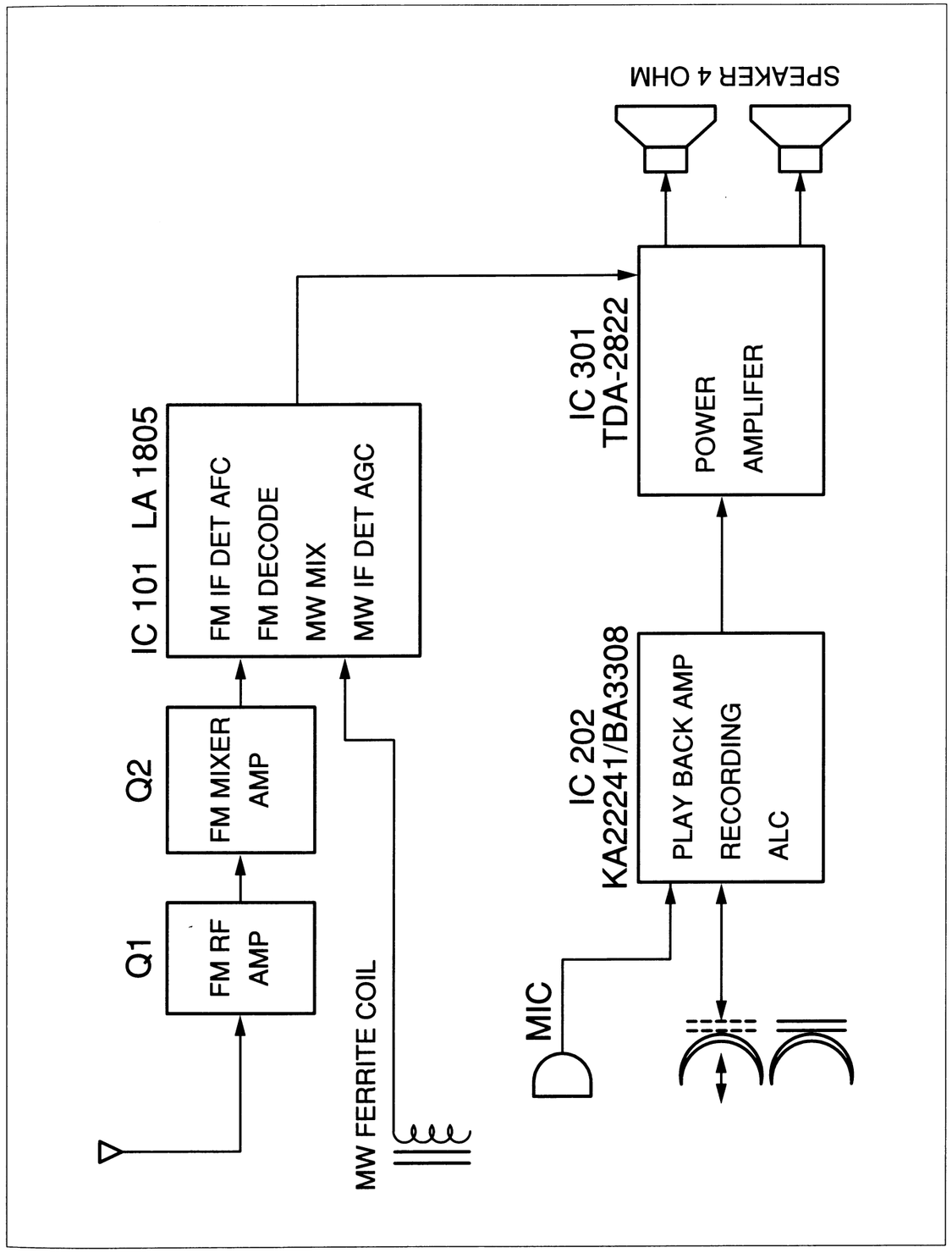
3. DISASSEMBLY INSTRUCTIONS

BACK CABINET DISASSEMBLY



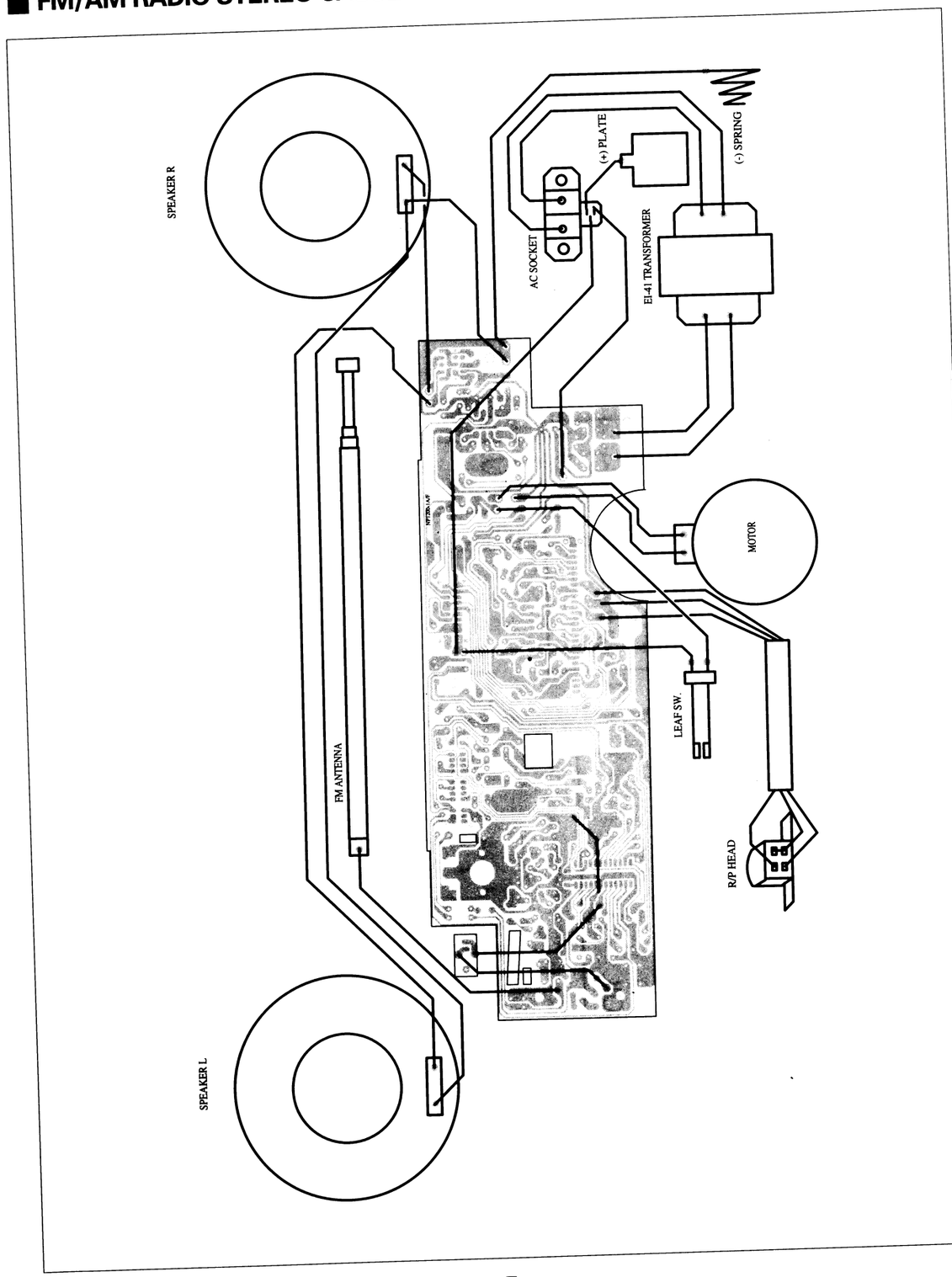
4. BLOCK DIAGRAM

■ **2 BAND (AM/FM)**



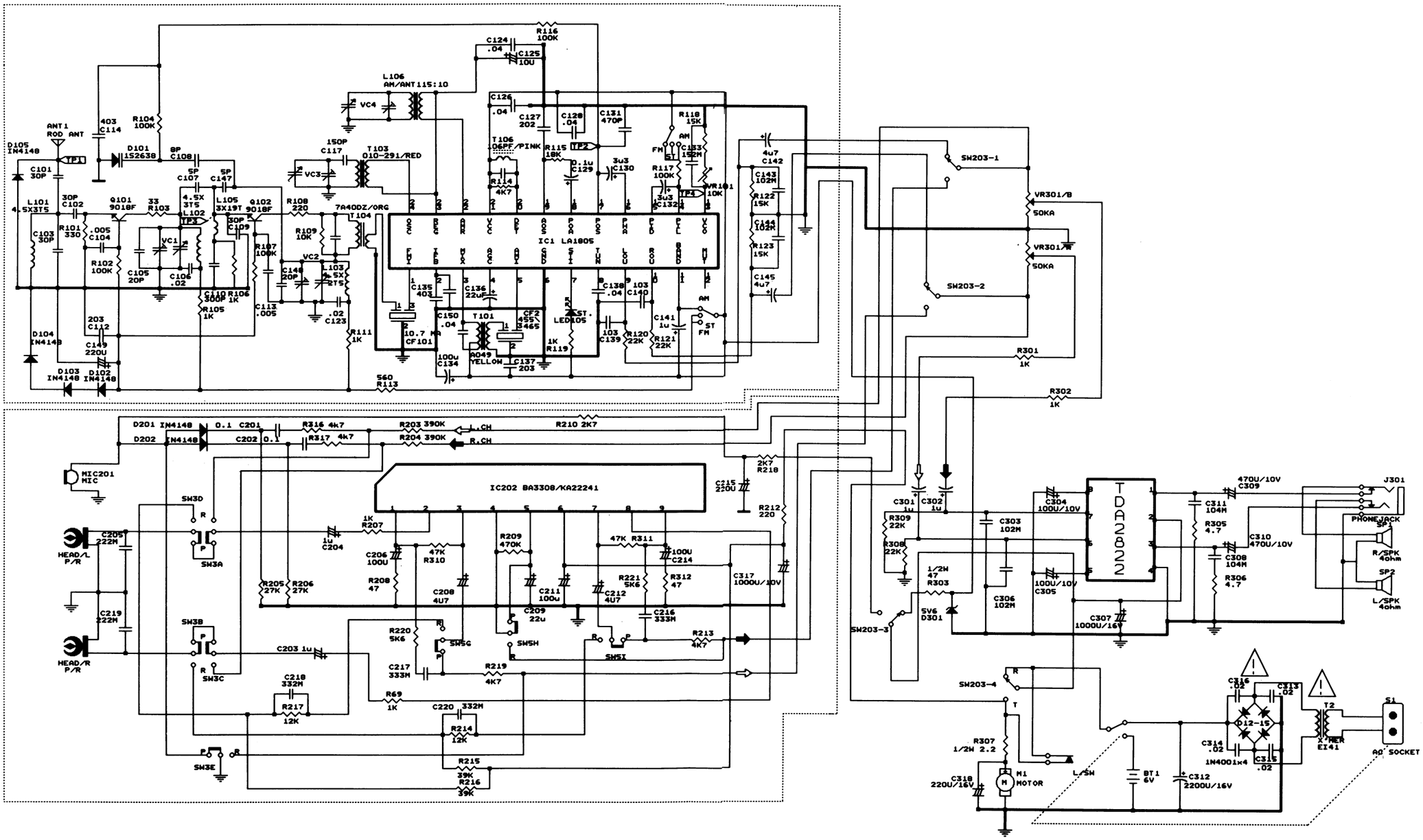
5. WIRING DIAGRAM

■ FM/AM RADIO STEREO CASSETTE



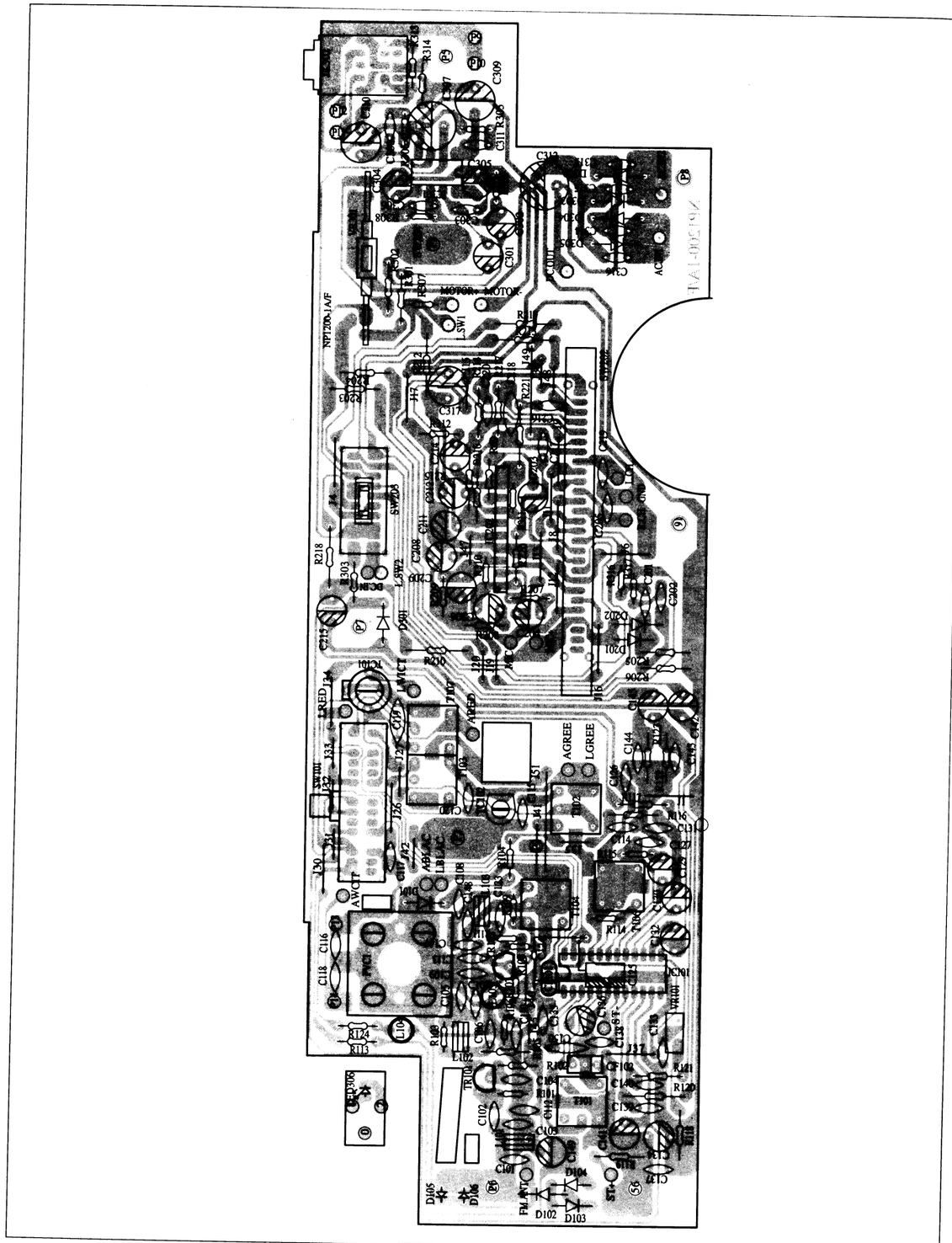
6. SCHEMATIC DIAGRAM

■ MAIN 2 BAND (AM/FM)

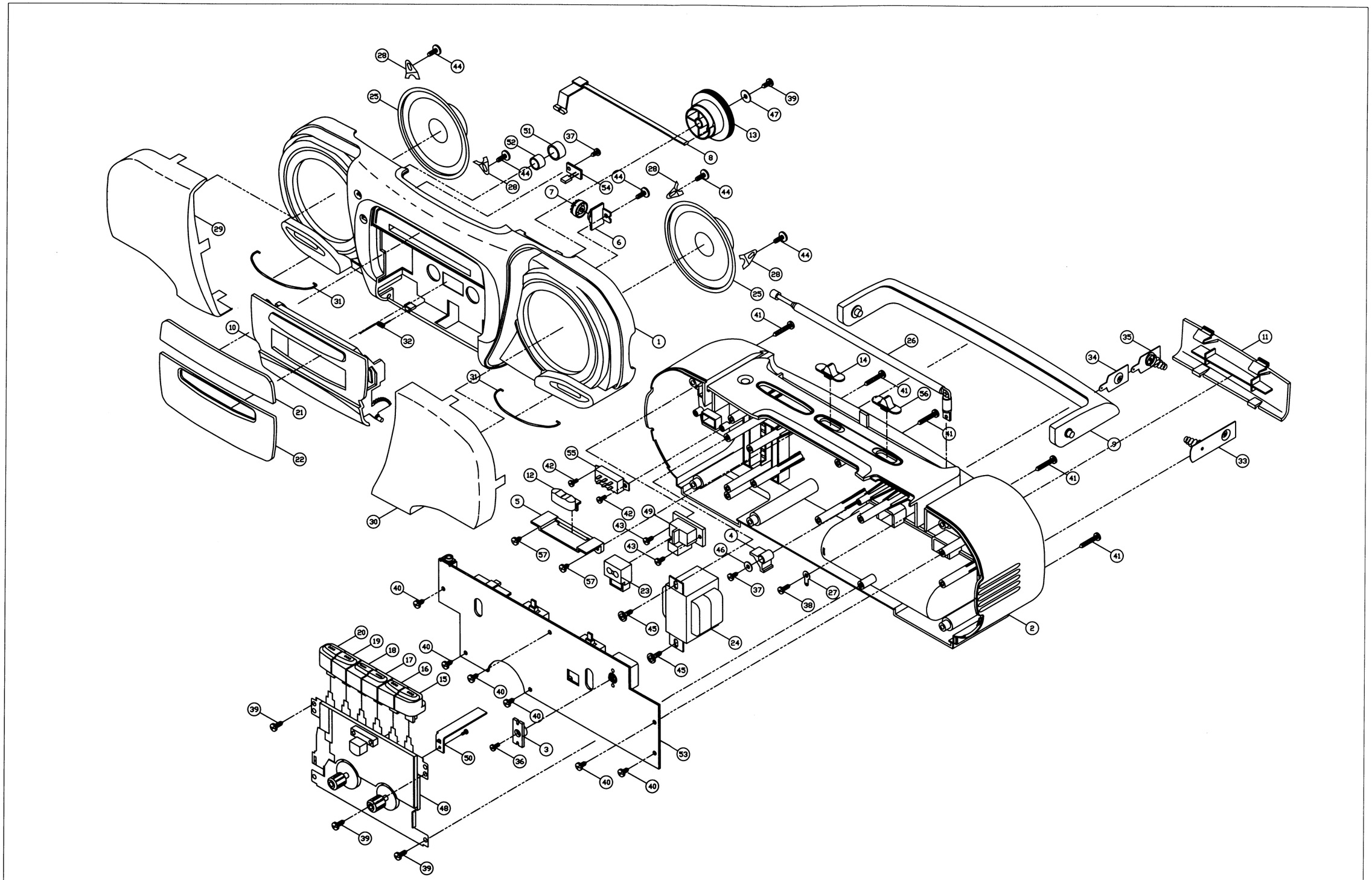


7. ELECTRICAL PART LOCATION

■ 2 BAND (AM/FM)



8. EXPLODED VIEW AND PART LIST

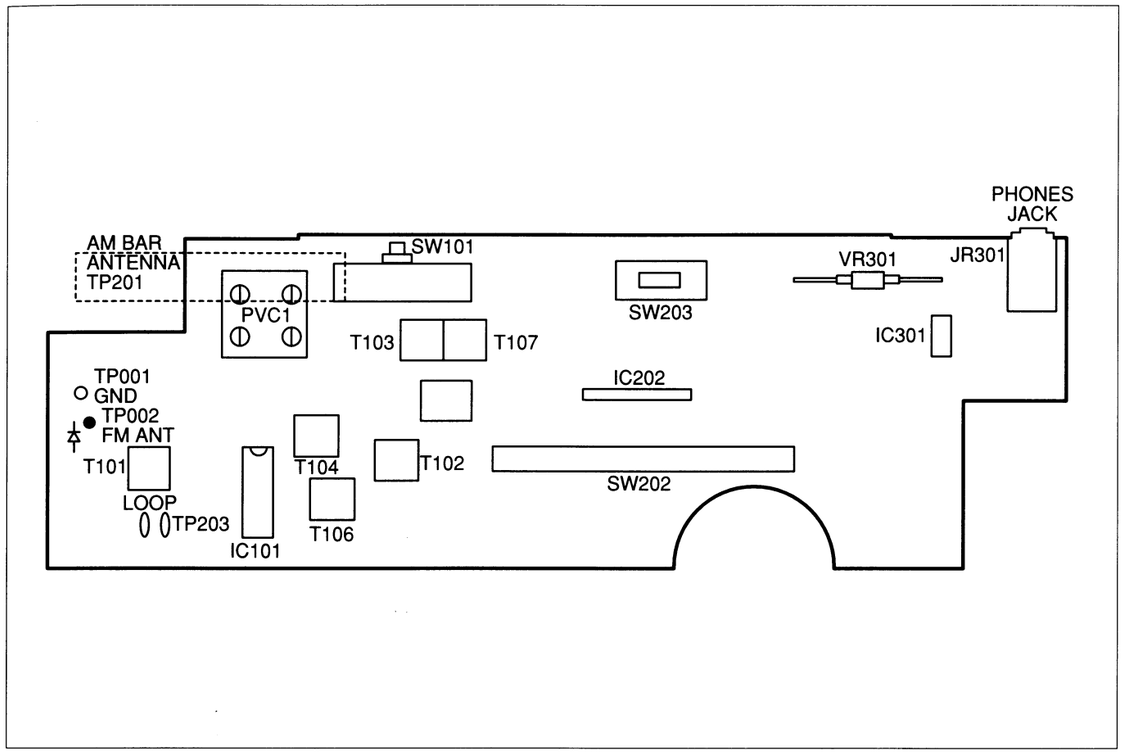


ITEM	PART NO	DESCRIPTION
1	12001099	FRONT CABINET
2	12001100	REAR CABINET
3	12001106	ADAPTOR TUNING
4	12001114	RECORD BRACKET
5	12001108	VOLUME KNOB BRACKET
6	12001112	DAMPER HOLDER
7	12001113	DAMPER GEAR
8	12001111	POINER (P.P)
9	12001103	HANDLE
10	12001101	CASS. DOOR
11	12001102	BATTERY DOOR
12	12001107	VOLUME KNOB
13	12001105	TUNING KN OB
14	12001110	FUNCTION KNOB
15	12001104	CASS. KNOB (REC.)
16	12001104	CASS. KNOB (PLAY)
17	12001104	CASS. KNOB (REW.)
18	12001104	CASS. KNOB (F.F)
19	12001104	CASS. KNOB (EJECT)
20	12001104	CASS. KNOB (PAUSE)
21	12001115	DIAL LENS (PMMA)
22	12001116	CASS. DOOR LENS (PMMA)
23	12001126	AC SOCKET COVER
24	12001124	TRANSFORMER
25	12001122	SPEAKER 3" 4OHM
26	12001119	ANTENNA #4B6158-6183
27	12001162	SOLDERING PLATE #3314
28	12001163	SDPEAKER CLIP #602
29	12001117	SPEAKER GRILL (L)
30	12001118	SPEAKER GRILL (R)
31	12001178	CHROME PLATE WIRE (WIRE FOOT)
32	12001161	CASS DOOR SPRING (dla 0.8mm)
33	12001127	BATTERY PLATE (+, -) #SX-490
34	12001128	BATTERY PLATE (+) #SX-490
35	12001129	BATTERY PLATE (-) #SX-490
36	12001149	MACHINE SCREW MS/BH 2.6x6
37	12001148	SELF-TAPPING SCREW TA/BH 2.6x8
38	12001150	SELF-TAPPING SCREW TA/BH 2.6x10
39	12001151	SELF-TAPPING SCREW TA/BH 3x10
40	12001152	SELF-TAPPING SCREW TA/BH 3x10
41	12001153	SELF-TAPPING SCREW TA/BH 3x20

ITEM	PART NO	DESCRIPTION
42	12001154	SELF-TAPPING SCREW TA/BH 2.6x6
43	12001156	SELF-TAPPING SCREW TA/BH 3x8
44	12001157	SELF-TAPPING SCREW TA/BH 3x8
45	12001158	SELF-TAPPING SCREW TA/BH 3x12
46	12001159	METAL WASHER 3x8x0.5mm
47	12001160	METAL WASHER 3.2x10x0.5mm
48	12001123	CASS. DECK PS-21VB
49	12001125	AC SOCKET
50	12001164	RECORDING PLATE #RC-188
51	12001121	MIC CUSHION
52	12001120	CONDENSER MIC dla 10mm CZN-15E
53	12001001	MAIN PCB
54	12001002	LED PCB
55	12001165	110/220 SWITCH SS-12J01G0
56	12001109	BAND KNOB
57	12001155	SELF-TAPPING SCREW TA/BH 3x6

9. ADJUSTMENTS

1) TUNER SECTION



■ TEST EQUIPMENT

① Signal generator with a frequency range of at least from 153 KHz to 23MHz AM
② Oscilloscope with a side amplifier of approximately 100KHz
③ Test loop-a coil of any size wire, one turn or more (MW)
④ A 30 ohm dummy antenna
⑤ VTVM

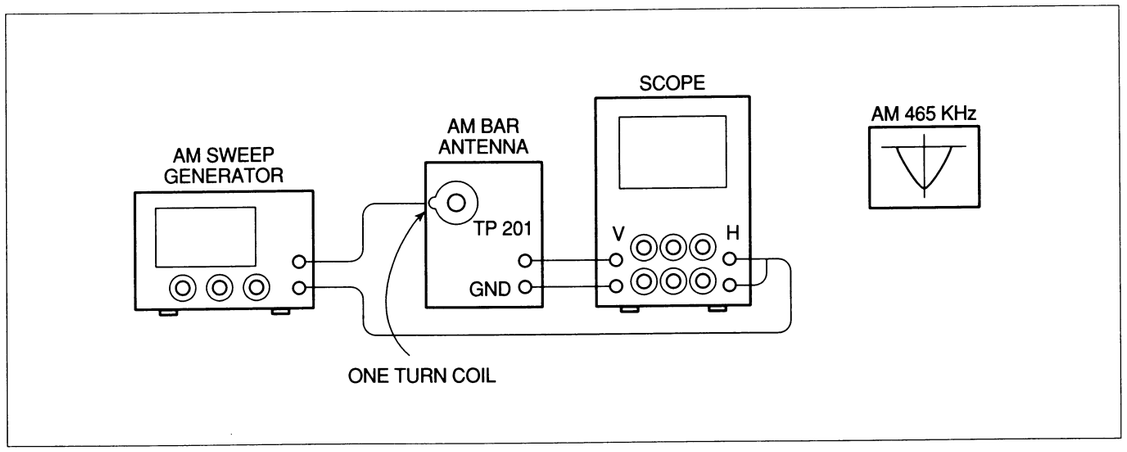
■ AM ALIGNMENT

① Turn on the AM signal and the VTVM allowing a fifteen-minute warm-up period.
② Using the test loop across the output of the signal generator, inductively connect the signal generator to the radio.
③ Connect the VTVM across the headphone jack or speaker terminal.
④ Set signal generator frequency as listed in ALIGNMENT CHART and maintain a sufficient output level to provide an indication on VTVM.

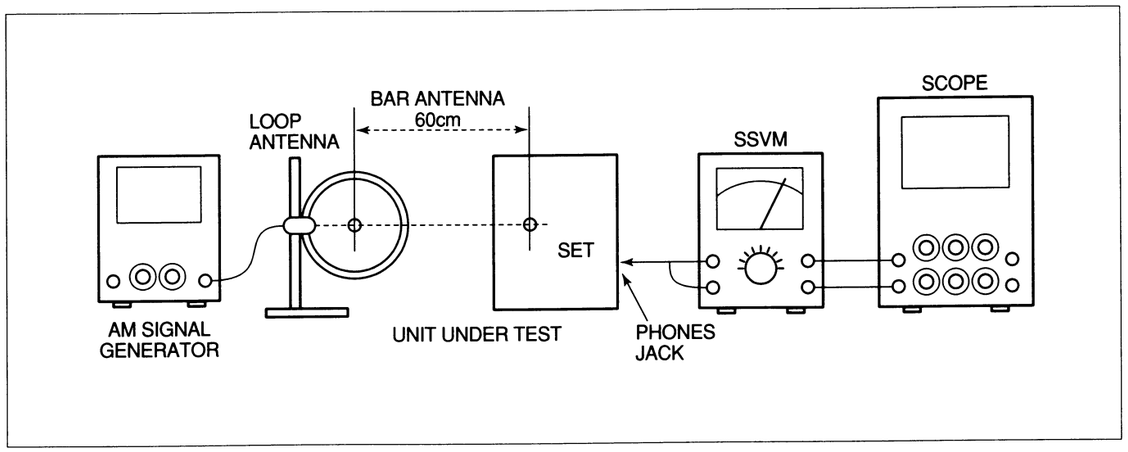
※ NOTE

① Use a screwdriver with plastic or ceramic grip for all adjustments.
② Standard test frequency 400Hz and modulation 30% for AM.
③ Standard test frequency 1KHz and deviation 22.5KHz for FM.

■ AM IF ALIGNMENT

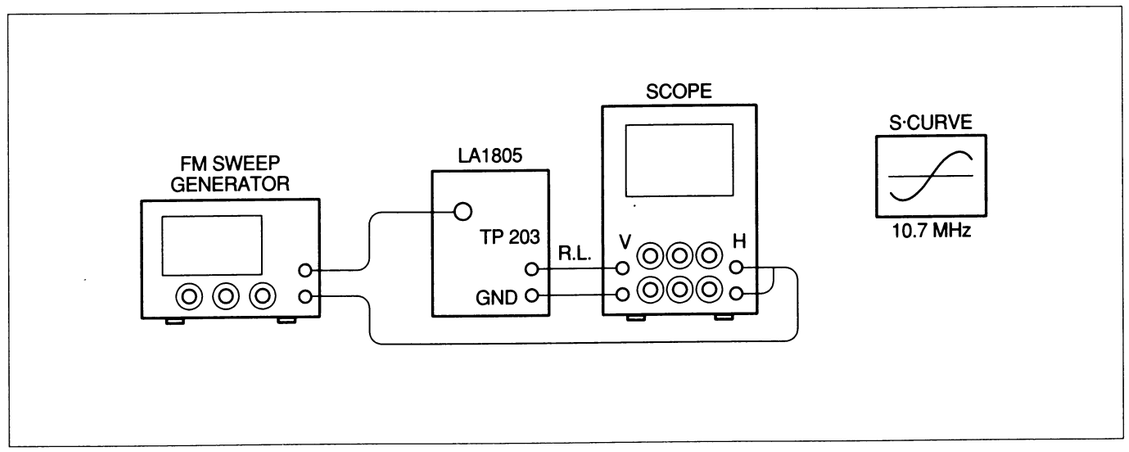


■ MW LW ALIGNMENT



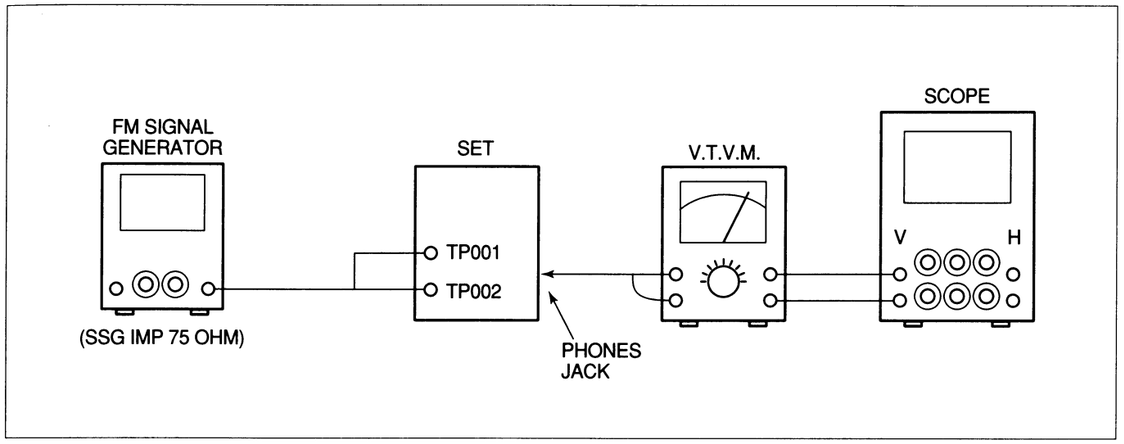
■ FM IF ALIGNMENT

1. Set the select switch to FM position
2. Turn on both sweep generator and osciiloscope, and allow a fifteen-minute warm-up period



■ FM RF ALIGNMENT

1. Turn on the signal generator and the VTVM, and allow a fifteen-minute warm-up period.
2. Connect the signal generator output through a 75 ohm dummy antenna across FM ANT.
3. Connect the VTVM across the speaker terminal or the phones jack.
4. Set the volume control to mid-position.
5. Adjust the signal generator frequency as indicated in FM-RF ALIGNMENT CHART, and maintain a sufficient signal output level to provide a measurable indication.
6. Proceed as outlined in the RM-RF ALIGNMENT CHART.



■ AM/FM MONO SINGLE CASS RECORDER (MODEL ARS-201A)

ALIGNMENT INSTRUCTION AM SECTION						
STEP	ALIGNMENT FREQ	TEST EQUIPMENT	SIGNAL-IN	SIGNAL-OUT	ADJUST	REMARK
1	465 Khz	1) AM IF SWEEP GEN WITH LOOP ANTENNA 2) ALIGNMENT OSCILLOSCO-PF 3) POWER SUPPLY	LET THE AM ANT. COIL CLOSE TO THE GEN. ANTENNA	TAKE OUT THE SIGNAL FROM TP2 POINT	ADJUST T101, GET MAX OUTPUT AT 465 KHz	1) BAND SW MW POSITION 2) VOL CONTROL IN MIN POSITION 3) TUNE PVC TO HIGH END
2	1620 KHz	1) AM SWEEP GEN WITH ANTENNA 2) ALIGNMENT OSCILLOSCO-PE 3) POWER SUPPLY	LET THE AM ANT COIL CLOSE TO THE GEN. ANTENNA	TAKE OUT THE SIGNAL FROM TP2 POINT	ADJUST VC3 TO GET MAX OUTPUT AT 1620 KHz	1) BAND SWIN MW POSITION 2) VOL. CONTROL IN MAX. POSITION 3) TUNE PVC TO HIGH END
3	520 KHz	SAME AS STEP 2	SAME AS STEP 1	SAME AS STEP 1	ADJUST T103 GET MAX. OUT-PUT AT 520 KHz	TUNE PVC TO LOW END
4	REPEAT STEP 2, 3 UNTIL NO FURTHERIMPROVEMENT CAN BE MADE					
5	1400 KHz	SAME AS STEP 2	SAME AS STEP 1	SAME AS STEP 1	ADJUST VC4 TO GET MAX OUT-PUT AT 1400 KHz	TUNE PVC TO 1400 KHz
6	600 KHz	SAME AS STEP 2	SAME AS STEP 1	SAME AS STEP 1	ADJUST L106 TO GERT MAX. OUTPUT AT 600 KHz	TUNE PVC TO 600 KHz
7	REPEAT STEP 5, 6 AND THEN STEP 2, 3, 5, 6, UNTIL NO FURTHER IMPROVEMENT CAN BE MADE					

■ AM/FM MONO SINGLE CASS RECORDER (MODEL : ARS-201A)

ALIGNMENT INSTRUCTION FM SECTION						
STEP	ALIGNMENT FREQ	TEST EQUIPMENT	SIGNAL-IN	SIGNAL-OUT	ADJUST	REMARK
1	IF 10.7 MHz	1) FM IF SWEEP GENERATOR 2) ALIGNMENT OSCILLOSCO PE 3) POWER SUPPLY	INJECT THE IF SWEEP SIGNAL THROUGH 10pF CAPACITOR TO TP3 POINT	SIGNAL ARE TAKEN OUT FROM TP2 POINT	ADJUST T104, T106 TO GET BEST "S" CURVE WITH CENTRE AT 10.7 MHz	1) BAND SW IN FM POSITION 2) VOL CONTROL IN MIN POSITION 3) TUNE PVC TO HIGH END
2	108.5 MHz	1) FM RF SWEEP GENERATOR 2) ALIGNMENT OSCILLOSCO-PE 3) POWER SUPPLY	INJECT THE RF SIGNAL DIRECTLY TO TP1 POINT	SAME AS STEP 1	ADJUST VC2 GET MAX. OUTPUT	1) BAND SW1 IN FM POSITION 2) VOL. CONTROL IN MAX. POSITION 3) TUNE PVC TO HIGH END.
3	87.5 MHz	SAME AS STEP 2	SAME AS STEP 2	SAME AS STEP 1	ADJUST L103 GET MAX. OUTPUT	TUNE PVC TO LOW END
4	REPEAT STEP 2, 3 UNTIL NO FURTHERIMPROVEMENT CAN BE MADE					
5	106 MHz	SAME AS STEP 2	SAME AS STEP 2	SAME AS STEP 1	ADJUST VC1 GET MAX OUTPUT	TUNE PVC TO 106 MHz
6	90 MHz	SAME AS STEP 2	SAME AS STEP 2	SAME AS STEP 1	ADJUST L102 GET MAX. OUTPUT	TUNE PVC TO 90 MHz
7	REPEAT STEP 5, 6 AND THEN STEP 2, 3, 5, 6, UNTIL NO FURTHER IMPROVEMENT CAN BE MADE					

■ AM/FM MONO SINGLE CASS RECORDER (MODEL : ARS-201A)

ALIGNMENT INSTRUCTION CASSETTE SECTION					
STEP	ITEM	CONDITION	CONNECTION	ALIGNMENT	OUTPUT
1	HEAD ADJUSTMENT	PLAY BACK TEST TAPE 6.3 KHz	VTVM AND OSCILLOSCOPE CONNECTED TO SPEAKER OUTPUT	HEAD FIXING SCREW	ADJUST TO GET MAX. OUTPUT
2	WOW & FLUTTERR	PLAY BACK TEST TAPE MTT-111 3 KHz	WOW & FLUTTER METER CONNECT TO SPEAKER OUTPUT	NIL	WITHIN SPEC.

10. IC VOLTAGE CHART AND BLOCK DIAGRAM

LA1805

		1	2	3	4	5	6	7	8	9	10	11	12
IC101	FM	1.6	1.6	5.3	0.2	1.6	0	3.9	0	2	2	4.6	0.9
	AM	1.6	1.6	5.5	0.8	1.6	0	3.9	0	1	2	5.6	0.9
		13	14	15	16	17	18	19	20	21	22	23	24
	FM	1	1.9	1	1.8	1.4	1.6	0.5	5.3	5.3	0	1.6	1.6
	AM	0	1.9	1.2	1.8	1.7	1.5	0.5	5.3	5.3	1.6	1.5	1.6

KA2241/BA3308

		1	2	3	4	5	6	7	8	9
IC202		1.9	0	1.9	0	0	5.6	1.9	0	1.9

TDA2822M

		1	2	3	4	5	6	7	8
IC301		2.7	6	3.7	0	0.6	0	0	0.6

9018G

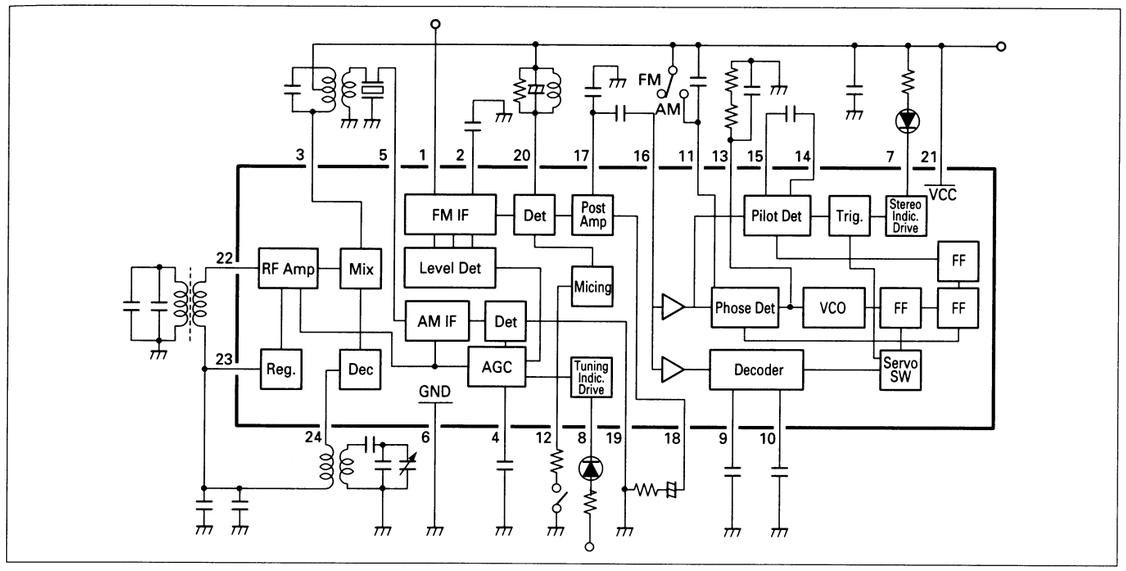
		B	C	E
TR101		1.2	1	0.3

9018G

		B	C	E
TR102		1.4	1.2	0.6

■ LA1805

Equivalent Circuit Block Diagram



Operationg conditions at Ta = 25°C			unit
Recommended Supply Voltage	Vcc	4.65	V
Operating Voltage Range	Vcc op	0.3 to 8.0	V

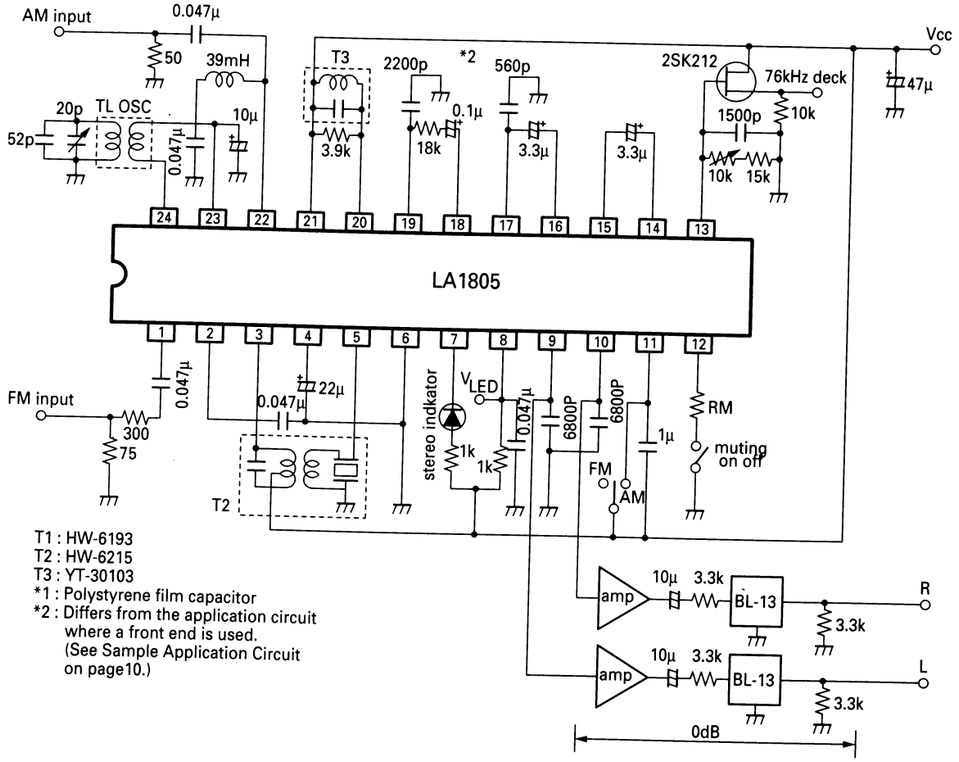
* The FM output level forms an N curve (LA1805) and an S curve (LA1806)
LA1805 : n curve (for US band)
LA1806 : S curve (for Japanese band). Your desired output level can be set by varying the output resistance.

Operating Characteristics at Ta = 25°C, Vcc = 4.5 V, See specified Test Circuit.

			min	typ	ma	unit
FM Characteristics (Mono) : fc = 10.7MHz, fm = 1kHz						
Quiescent Current	ICCO	No input		13	20	mA
–3dB Sensitivity	–3dB.L.S.	Referenced to VIN = 100dBμ, 100%, down 30dB		28	35	dBμ
Demodulation Output	Vo	VIN = 100dBμ, 100% mod.	140	205	280	mV
Channel Balance	C.B.	VIN = 100dBμ, 100% mod.	0	0	1.5	dB
Total harmonic Distortion	THD	VIN = 100dBμ, 100% mod.		0.45	1.2	%
Signal to Noise Ratio	S/N	VIN = 100dBμ, 100% mod.	70	80		dB
LED ON sensitivity	VLED	IL = 1mA	23	33	43	dBμ
FM characteristics (Stereo) : fc = 10.7MHz, fm = akHz, L + R = 90%, pilot = 10%, VIN = 100dBμ						
Separation	Sep		32	48		dB
Stereo Distortion	THD (Main)			0.45	1.2	%
LED ON Level	VLED - on		2.4	3.9	5.4	%
LED OFF Level	VLED - off			2.7		%
AM Characteristics : fe = 1000kHz, fm = 1kHz						
Quiescent Current	Icco	No input		9.5	14.5	mA
Detection Output	Vo1	VIN = 23dBμ, 30% mod.	27	50	90	mV
	Vo2	VIN = 80dBμ, 30% mod.	70	113	173	mV
Signal to Noise Ratio	S/N1	VIN = 23dBμ, 30% mod.	17	21		dB
	S/N2	VIN = 80dBμ, 30% mod.	50	55		dB
Total Harmonic Distortion	THD1	VIN = 80dBμ, 30% mod.		0.45	1.2	%
	THD2	VIN = 100dBμ, 30% mod.		0.6	1.5	%
LED ON Sensitivity	VLED	IL = 1mA	16	24	32	dBμ

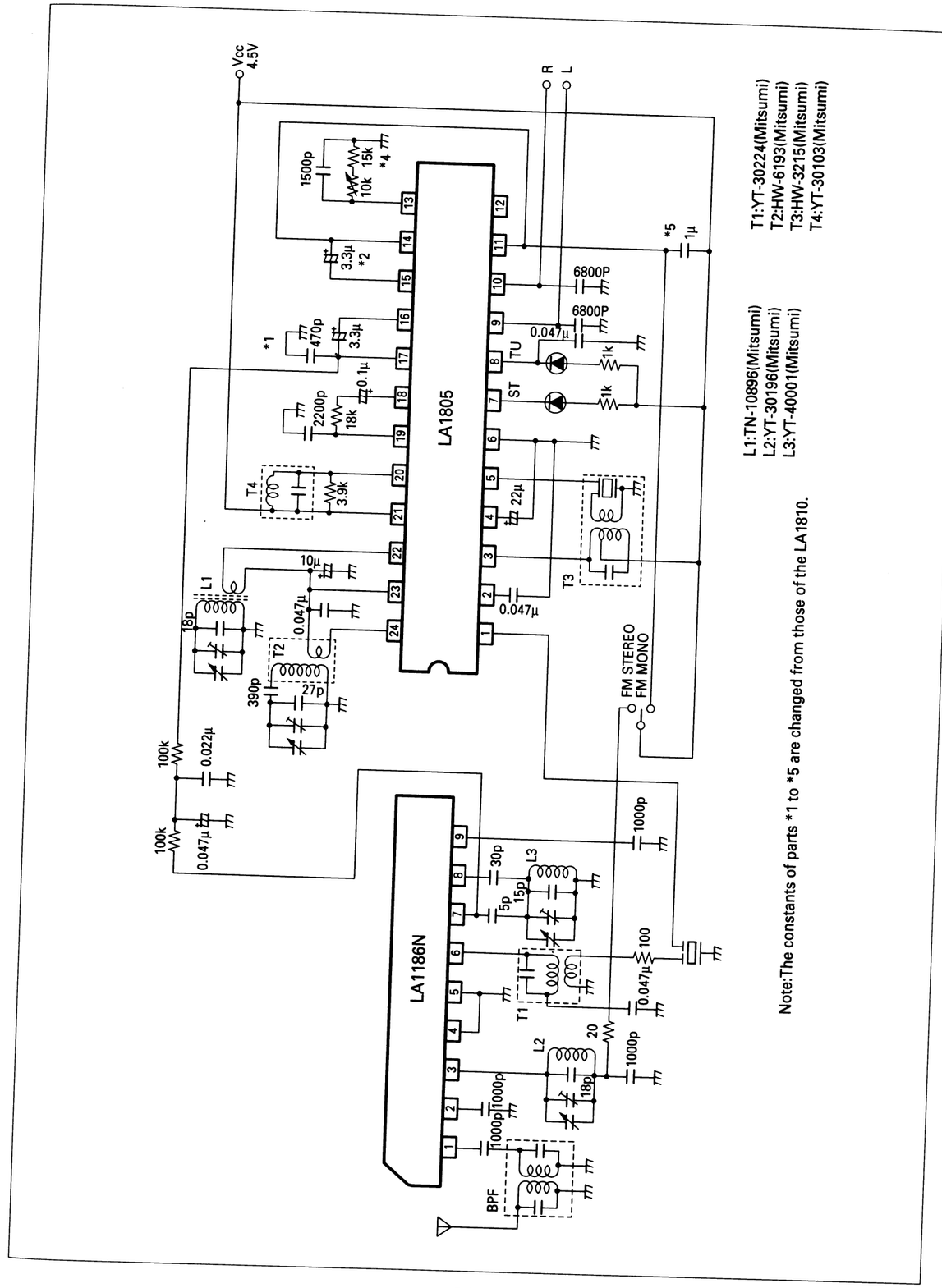
Note : Be fully careful of dielectric break'down.

Test Circuit



T1 : HW-6193
T2 : HW-6215
T3 : YT-30103
*1 : Polystyrene film capacitor
*2 : Differs from the application circuit where a front end is used. (See Sample Application Circuit on page10.)

Sample Application Circuit : LA1186N + LA1805 FM/MW



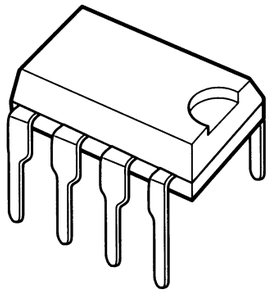
Note:The constants of parts *1 to *5 are changed from those of the LA1810.

■ TDA2822M

DUAL LOW-VOLTAGE POWER AMPLIFIER

- SUPPLY VOLTAGE DOWN TO 1.8V
- LOW CROSSOVER DISTORTION
- LOW QUIESCENT CURRENT
- BRIDGE OR STEREO CONFIGURATION

The TDA2822M is a monolithic integrated circuit in 8 lead Minidip package. It is intended for use as ?oudio power ampifier in portable cassette players and radios.

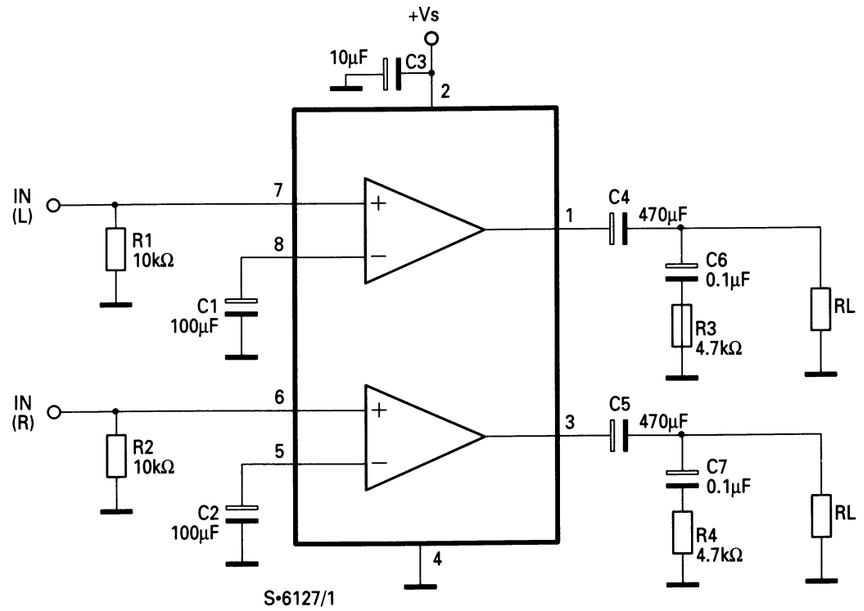


DRDERING NUMBER : TDA2822M

ABSOLUTE MAXIMUM RATINGS

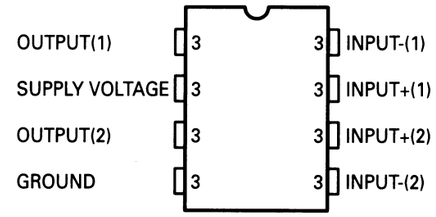
Vs	Supply voltage	15	V
Io	Peak output current	1	A
P_{tot}	Total power dissipation at T_{amb} = 50°C	1	W
	at T_{case} = 50°C	1.4	W
T_{stg}, T_j	Storage and junction temperature	-40 to 150	°C

TEST CIRCUIT

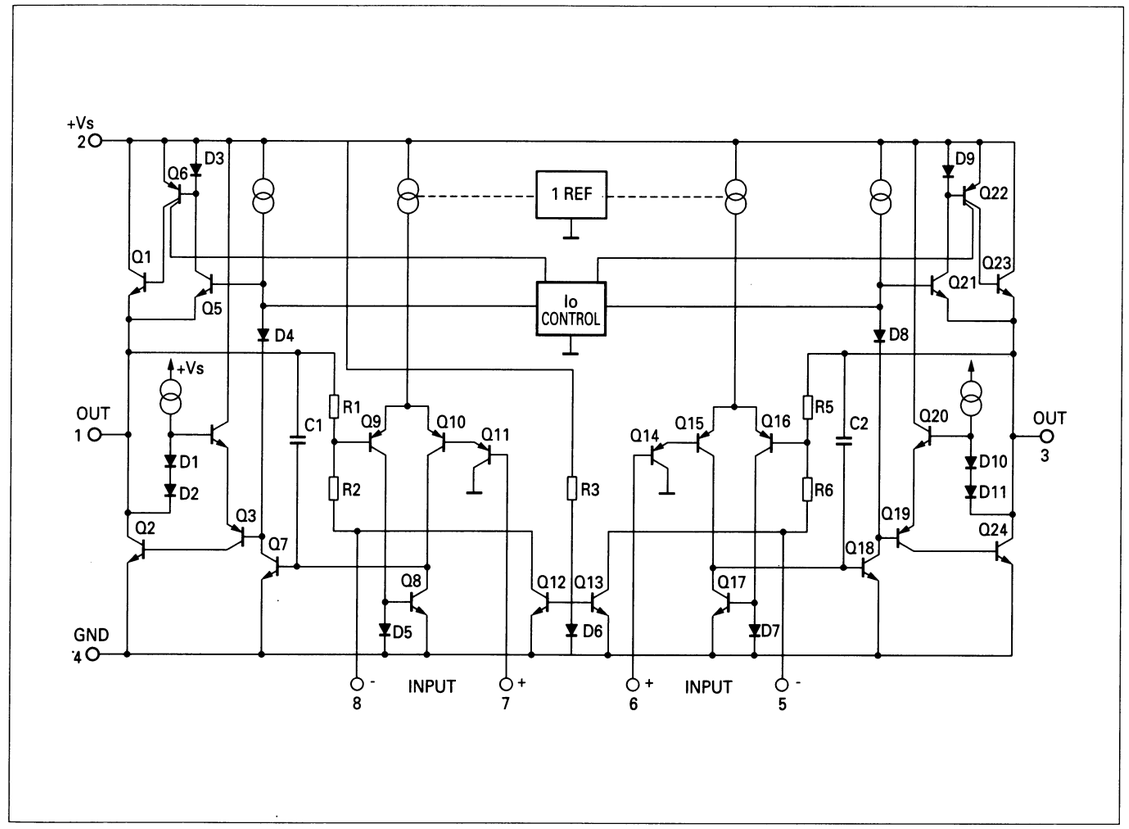


TDA2822M

CONNECTION DIAGRAM
(Top view)



SCHEMATIC DIAGRAM



STEREO APPLICATION

Fig. 1-Test circuit

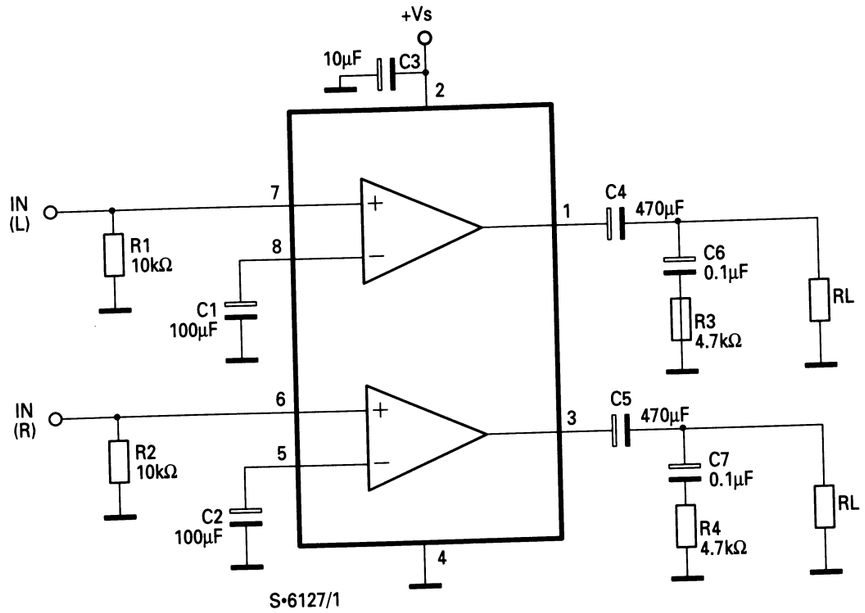
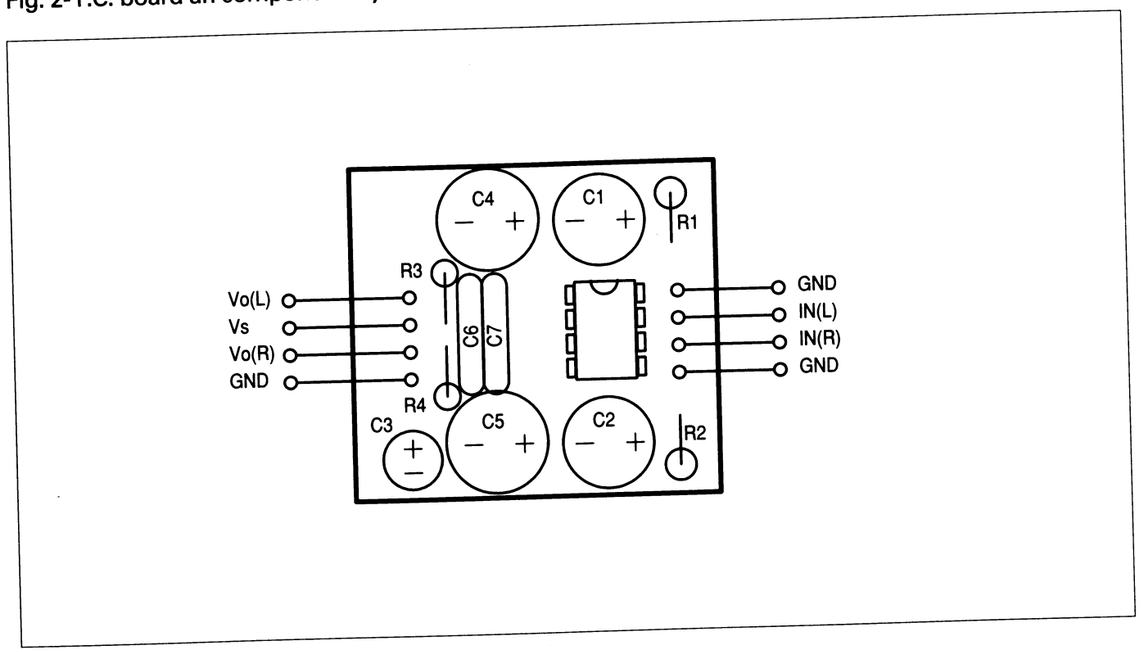


Fig. 2- P.C. board an component layout of the circuit of Fig. 1 (1 : 1 scale)



TDA2822M

ELECTRICAL CHARACTERISTICS (Vs = 6V, Tamb = 25°C, unless otherwise specified)

Parameter		Test Conditions		Min.	Typ.	Max.	Unit
STEREO (Test circuit of Fig. 1)							
V_s	Supply voltage			1.8		15	V
V_o	Quiescent output voltage				2.7		V
		Vs = 3V			1.2		V
I_d	Quiescent drain current				6	9	mA
	Input bias current				100		nA
P_o	Output power (each channel) (f = 1KHz, d = 10%)	R_L = 32Ω	Vs = 9V		300		mW
			Vs = 6V	90	120		
			Vs = 4.5V	60			
			Vs = 3V	15	20		
			Vs = 2V		5		
		R_L = 16Ω	Vs = 6V	170	220		mW
		R_L = 8Ω	Vs = 9V		1000		mW
			V2 = 6V	300	380		
		R_L = 4Ω	Vs = 6V	450	650		mW
			Vs = 4.5V		320		
			Vs = 3V		110		
D	Distortio (f = 1KHz)	R_L = 32Ω	Po = 40mW		0.2		%
		R_L = 16Ω	Po = 75mW		0.2		%
		R_L = 8Ω	Po = 150mW		0.2		%
	Closed loop voltage gain	f = 1KHz		36	39	41	dB
$\triangle G_v$	Channel balance					±1	dB
R_i	Input resistance	f = 1KHz		100			KΩ
E_N	Total input noise	R_s = 10kΩ	B = Curve A		2		µV
			B = 22Hz to KHz		2.5		
SVR	Supply voltage rejection	f = 100Hz	C1 = C2 = 100µF	24	30		dB
C_s	Channel separation	f = 1kHz			50		dB

BRIDGE APPLICATION

Fig.3 - Test circuit

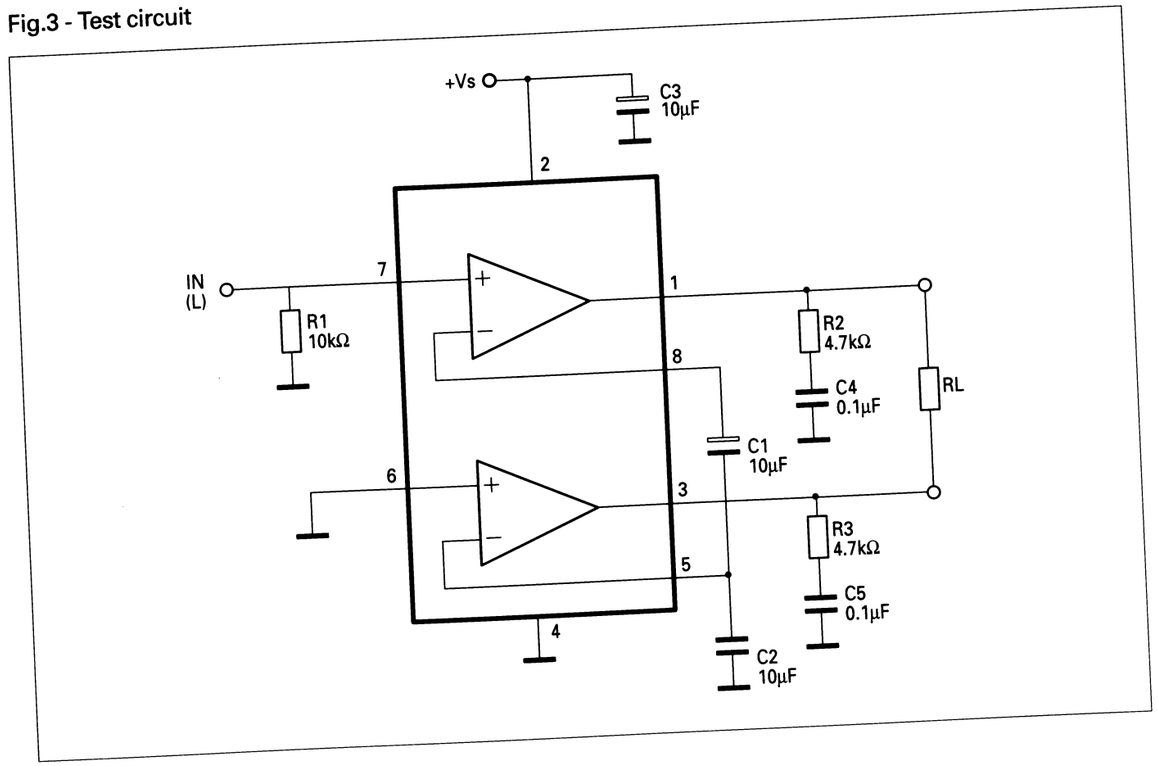
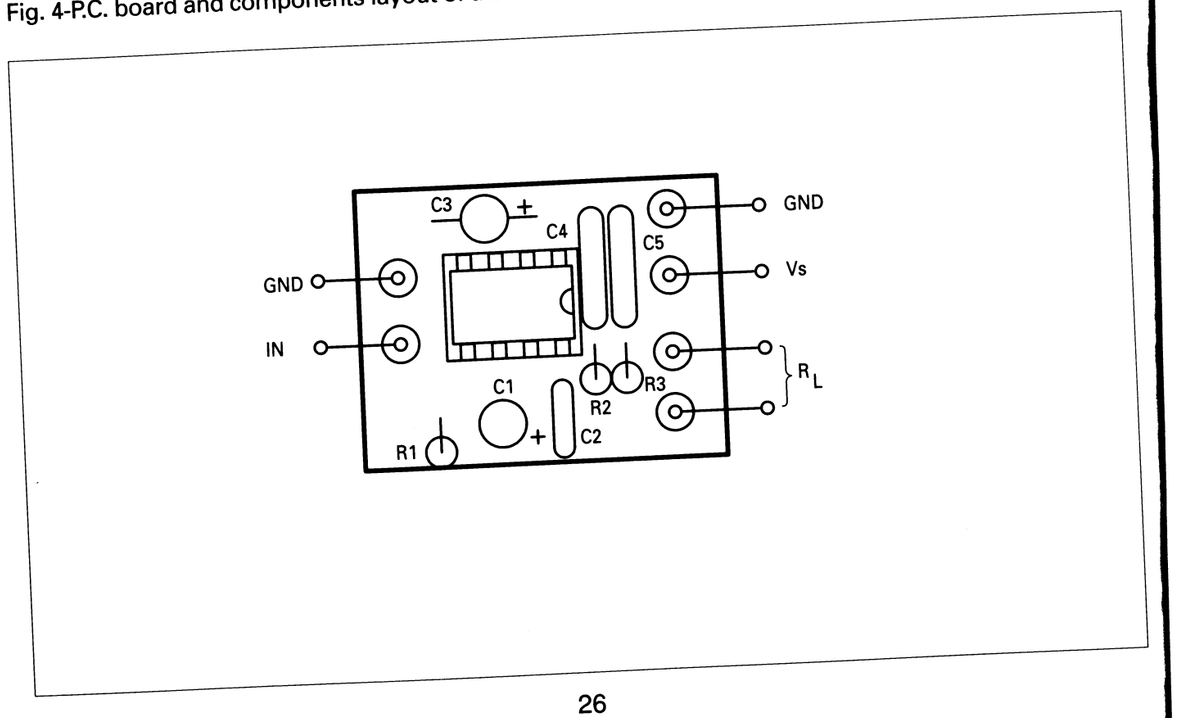


Fig. 4-P.C. board and components layout of the circuit of Fig. 3 (1 : 1 scale)



TDA2822M

Fig. 20 Low cost application for portable players (using only one 100µF output capacitor)

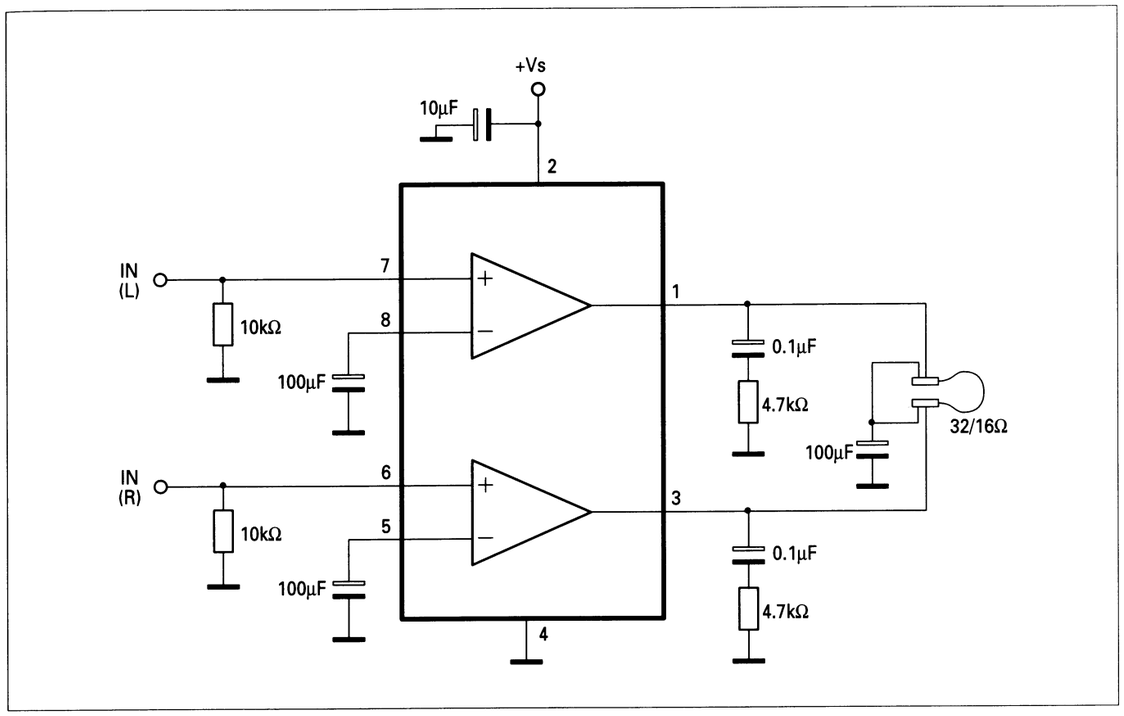
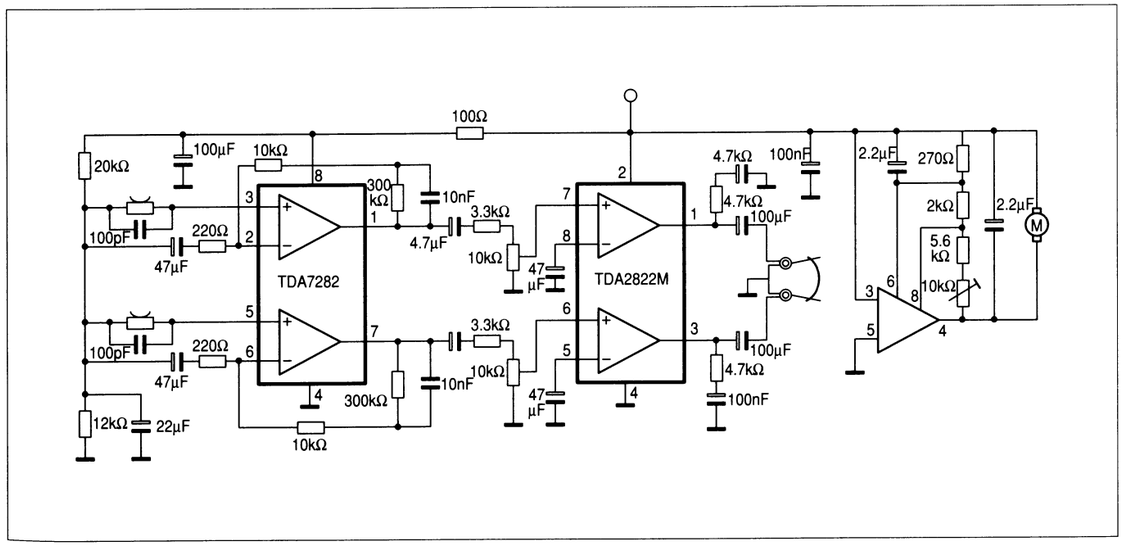


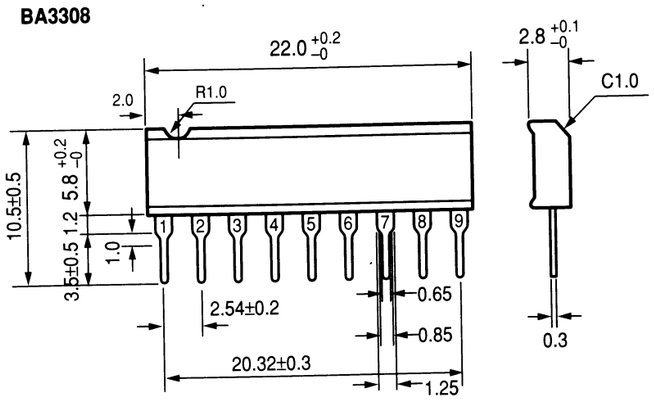
Fig. 21-3V Stereo cassette player with motor speed control



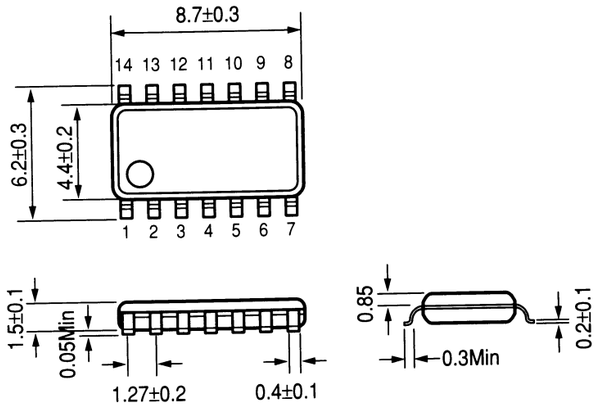
■ BA3308/BA3308F

Dimensions (Unit : mm)

BA3308



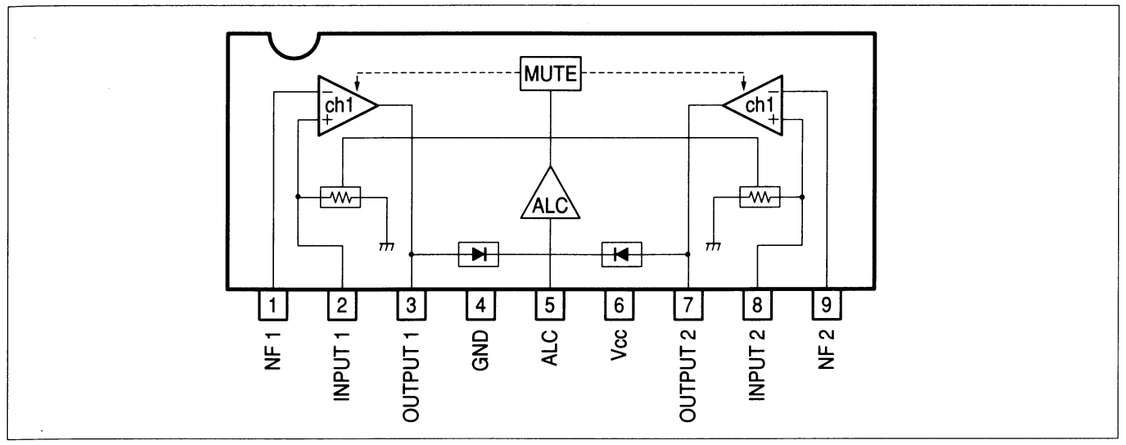
BA3308F



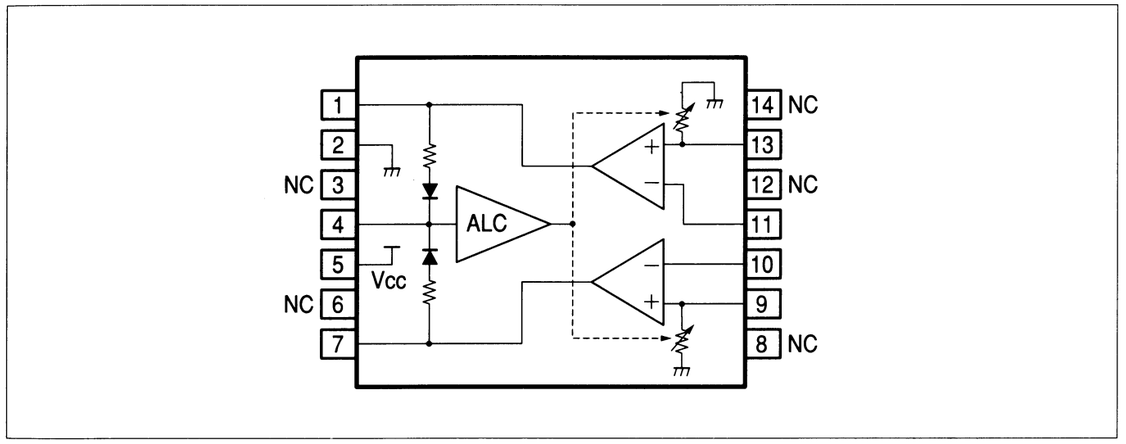
● Features

1) Built-in ALC rectifier diode.
2) Wide range of working power supply voltage (Vcc = 4.5 ~ 14V).
3) Small current consumption (I_Q = 3.5mA).
4) High gain (G_{VO} = 80 dB).
5) Low distortion factor (THD = 0.1%)
6) Low noise (V_{NIN} = 1 μVrms).
7) Requires no input coupling capacitor.
8) Good ALC channel balance.
9) built-in power supply muting circuit.
10) Dynamic range of ALC is variable by using an external input resistor.

BA3308



BA3308F



● Absolute Maximum Ratings (Ta = 25°C)

Symbol	Limits	Unit
Vcc	16	V
	500*1	mW
	450*2	
Topr	-25 ~ 75	°C
Tstg	-55 ~ 125	°C

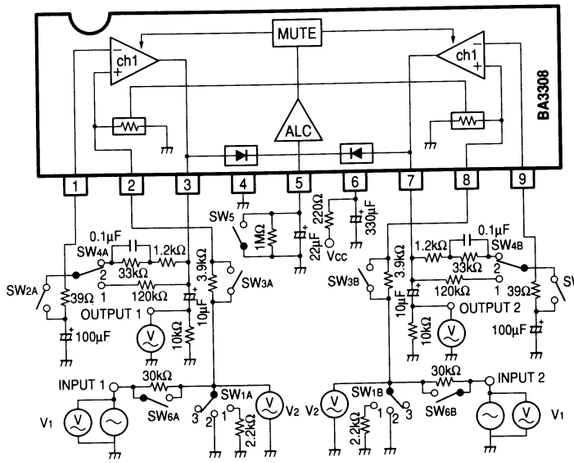
● Recommended Operating Conditions (Ta = 25°C)

Symbol	Min.	Typ.	Max.	Unit
Vcc	4.5	–	14	V

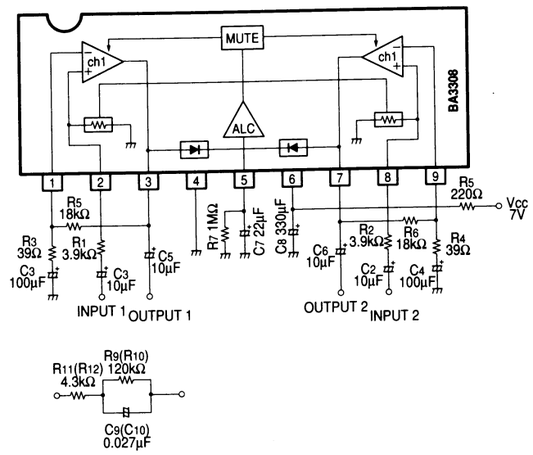
● Electrical Characteristics (Unless otherwise noted, Ta = 25°C, Vcc = 7.0V, f = 1kHz, BPF20 ~ 20kHz)

Symbol	Min.	Typ.	Max.	Unit	Conditions	Test Circuit
I_Q	1.5	3.5	4.5	mA	V_{IN} = 0Vrms	Fig.1
G_{VO}	70	80	–	dB	V_{OUT} = -10dBV	Fig.1
THD	–	0.1	0.3	%	NAB34DB, V_{OUT} = 40mVrms	Fig.1
R_{IN}	15	25	45	kΩ	–	Fig.1
V_{OM}	0.6	1.2	–	V_{rms}	THD = 1%	Fig.1
V_{NIN}	–	1.0	2.0	μV_{rms}	Rg = 2.2kΩ, NAB34dB at 1kHz	Fig.1
ALC	40	45	–	dB	Rg = 3.9kΩ, V_{IN} = 70dBV THD = 3%	Fig.1
△ALC	–	0	2.5	dB	V_{IN} = -60dBV, –30dBV	Fig.1
CS	60	75	–	dB	V_O = 0dBV, NAB34dB	Fig.1

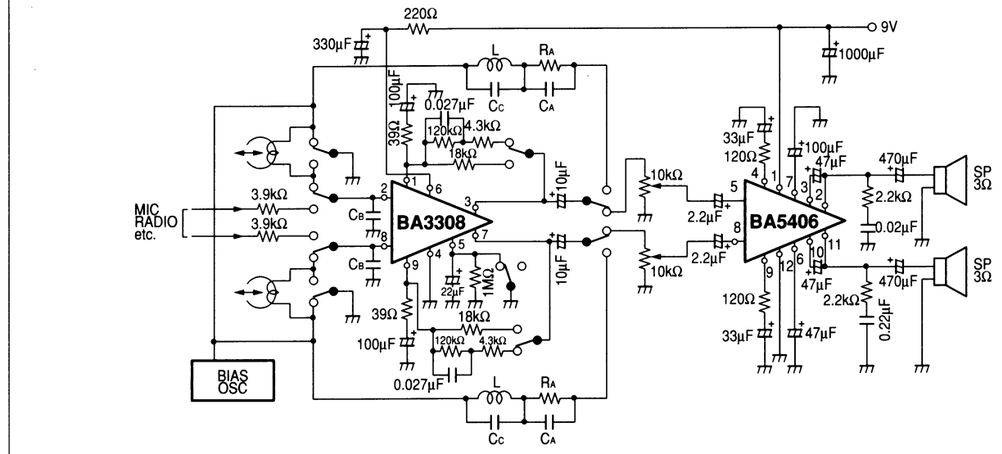
● Test Circuit

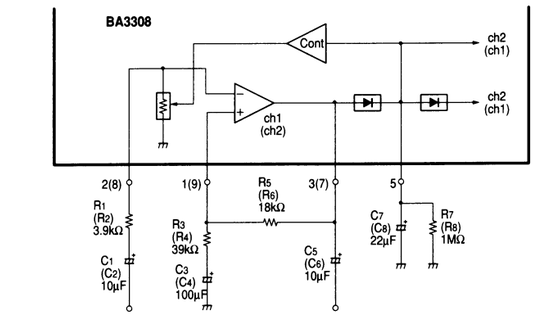


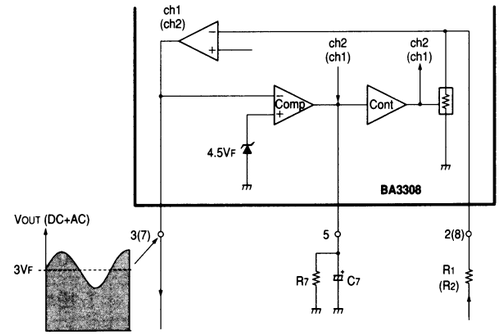
● Application Example

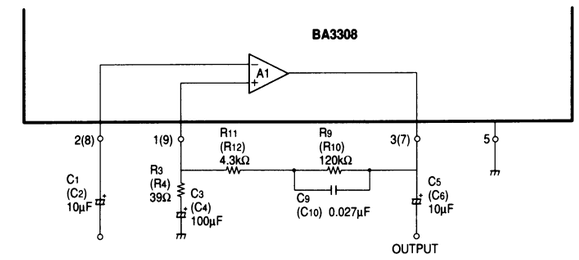


● TOTAL









11. PART LIST

■ MAIN BOARD

PART NO	DESCRIPTION	UNIT	PART LOCATION
1	MAIN BOARD ARS-201A	1	243 X 79 X 1.6 MM (HB) NP-1200-01 A/F
2	LED BOARD ARS-201A	1	15 X 7.5 X 1.6 MM (HB) NP-1200-02
	IC		
3	LA 1805 (SANYO)	1	IC 101
4	BA3308	1	IC 202
5	TDA 2822M (SGS)	1	IC 301
	SLIDE SWITCH		
6	SK63D01-M9 (LUCKY FIRST)	1	SW 101
7	PS-92D01 (LUCKY FIRST)	1	SW 202
8	SK-42H03-M9 (LUCKY FIRST)	1	SW 203
9	PVC (TOMY) T-126/4MM (A/F)	1	
10	SEMI-FIXED 10K (V) F-639	1	VR 101
11	SLIDE VOLUME 1572 A 50K	1	VR 301
12	BAR HOLDER K5	2	
13	BAR 10 X 60 MM	1	
14	STEREO LED 2 X 5 MM (RED)	1	LED 105
15	PHONE JACK (3.5 MM) ST-212	1	J 301
	FM COIL		
16	ø 4.5 X 3 1/2T X 0.8 MM	2	L 101, 102
17	ø 4.5 X 2 1/25 X 0.8 MM	1	L 103
18	ø 3 X 19 1/2T X 0.5 MM	1	L 105
	I.F.T.		
19	A 049 YELLOW	1	T 101
20	331B/010-291 RED	1	T 103
21	7A40DZ ORANGE	1	T 104
22	106FP/784 PINK	1	T 106
23	AM COIL 115 : 10T (M3) 120MM X 4	1	L 106
24	TRANSISTOR 9018G	2	Q101, 102
	RESISTOR 1/2 W		
25	2.2 OHM	1	R 307
26	47 OHM	1	R 303
	RESISTOR 1/4 W		
27	4.7 OHM	2	R 305, 306

PART NO	DESCRIPTION	UNIT	PART LOCATION
28	33 OHM	1	R 103
29	47 OHM	2	R 208, 312
30	220 OHM	2	R 212, 108
31	330 OHM	1	R 101
32	560 OHM	1	R 113
33	1K OHM	8	R 69, 105, 106, 111, 119, 207, 301, 302
34	2.7K OHM	2	R 210, 218
35	4.7K OHM	5	R 114, 213, 219, 316, 317
36	5.6K OHM	2	R 220, 221
37	10K OHM	1	R 109
38	12K OHM	2	R 214, 217
39	15K OHM	3	R 118, 122, 123
40	18K OHM	1	R115
41	22K OHM	4	R 120, 121, 308, 309
42	27K OHM	2	R 205, 206
43	39K OHM	2	R 215, 216
44	47K OHM	2	R 310, 311
45	100K OHM	5	R 102, 104, 107, 116, 117
46	390K OHM	2	R 203, 204
47	470K OHM	2	R 209
	C. CAP.		
48	5 PF	2	C 107, 147
49	8 PF	1	C 108
50	20 PF	1	C 105
51	20 PF	1	C 148
52	30 PF	4	C 101, 102, 103, 109
53	150 PF	1	C 117
54	300 PF	1	C 110
55	470 PF	1	C 131
56	0.005	2	C 104, 113
57	0.002	1	C 127
58	0.04	6	C 114, 124, 126, 135, 138, 150
59	0.02	8	C 106, 112, 123, 137, 313, 314, 315, 316
60	0.01	2	C 139, 140
61	0.1	2	C 201, 202
	ELECT. CAP.		

PART NO	DESCRIPTION	UNIT	PART LOCATION
62	0.1UF/10V	1	C 129
63	1UF/10V	5	C 141, 203, 204, 301, 302
64	3.3UF/10V	2	C 130, 132
65	4.7UF/10V	4	C 142, 145, 208, 212
66	10UF/10V	1	C 125
67	22UF/10V	2	C 136, 209
68	100UF/10V	6	C 134, 206, 211, 214, 304, 305
69	220UF/10V	2	C 149, 215
70	220UF/16V	1	C 318 (MOTOR)
71	470UF/10V	21	C 309, 310
72	1000UF/10V	1	C 317
73	1000UF/16V	1	C 307
74	2000UF/16V	1	C 312
	MAYLAR CAP.		
75	102 (0.001)	4	C 143, 144, 303, 306
76	104 (0.1	2	C 308, 311
77	152 (0.0015)	1	C 133
78	222 (0.0022)	2	C 205, 219
79	332 (0.0033)	2	C 218, 220
80	333 (0.033)	2	C 216, 217
	CERMIC FILTER		
81	AM 465Y (MURATA)	1	CF 102
82	FM 10.7MHZ (MURATA)	1	CF 101
83	AFC. DIODE 1S2638	1	D 101
84	ZENER DIODE 5.6V	1	D 301
85	DIODE 1N4001	4	D 302-305
86	DIODE 1N4148	6	D 102, 103, 104, 105, 201, 202
87	SPONGE 10 X 10 X 10 MM	2	L 103, 102
88	SCREW KH 2.6 X 4	2	FOR PVC
89	EYELET 1.7 X 4 MM	22	
90	BARE WIRE 40 MM	35	
91	PVC TUBE ø3 X 0.5 X 25 MM	1	FOR AM COIL
92	PVC TUBE ø1 X 0.5 X 15 MM	4	FOR JUMPER WIRE
93	PVC TUBE ø1 X 0.5 X 10 MM	2	1-JUMPER WIRE, 1-FOR C308
94	PVC CUSHION 20 X 20 X 1 MM	1	FOR PVC
95	JUMPER WIRE AWG#26 40 MM (BLACK)	1	

■ CASING PART

PART NO	DESCRIPTION	UNIT	PART LOCATION
1	FRONT CABINET (ABS)	1	
2	REAR CABINET (ABS)	1	
3	CASSETTE DOOR (ABS)	1	
4	BATTERY DOOR (ABS)	1	
5	HANDLE (ABS)	1	
6	CASS. KNOBS X 6 (ABS)	1KIT	
7	TUNING KNOB (ABS)	1	
8	TUNING ADAPTER (ABS)	1	
9	VOLUME KNOB (ABS)	1	
10	VOLUME BRACKET (ABS)	1	
11	BAND KNOB (ABS)	1	
12	FUNCTION KNOB (ABS)	1	
13	POINTER (P.P)	1	
14	GEAR DAMPER (ABS)	1	
15	GEAR (ABS)	1	
16	RECORDING BRACKET (ABS)	1	
17	DIAL LENS (A/F) (PMMA)	1	
18	CASS. LENS (PMMA)	1	
19	SPEAKER GRILL (L)	1	
20	SPEAKER GRILL (R)	1	
21	ANTENNA #4B6158-6183 (PARDEN IND)	1	
22	CON. MIC o10 MM	1	
23	MIC. CUSHION T-97 (DAVID)	1	
24	SPEAKER 3" 4 OHM SABONIA	2	
	(7987DNC) HT 4ohm 1W W/BLACK CAP		
25	CASS. DECK PS-21VB (POLY-SZE)	1	
26	TRANSFORMER EL-41 MPT41258G (VDE)	1	
27	AC SOCKET		
	VDE (TK-11) or UL (AS-207)		
28	AC SOCKET COVER		
29	BATTERY PLATE (+, –) #SX-490	1	
30	BATTERY PLATE (+,–) #SX-490	1	
31	BATTERY PLATE (–) #SX-490	1	
	UL JUMPER WIRE AWG. #26		

PART NO	DESCRIPTION	UNIT	PART LOCATION
32	120 MM (BLACK)	1	BATT. PLATE "–" TO MAIN PCB GRD
33	150 MM (WHITE)	1	FM ANT.
34	160 MM (GREY)	1	AC SOCKET TO MAIN BOARD DC OUT
35	160 MM (RED)	1	MOTOR "+" TO MAIN BOARD
36	160 MM (BLACK)	1	MOTOR "–" TO MAIN BOARD
37	170 MM (BLACK)	1	"L" SPK. "–" TO MAIN BOARD
38	210 MM (RED)	1	"L" SPK. "+" TO BOARD
39	220 MM (RED)	1	AC SOCKET TO BATT PLATE "+"
40	250 MM (BULE)	1	AC SOCKET TO MAIN BOARD DCIN
41	370 MM (REEN)	1	LED "+" TO MAIN BOARD
42	200 MM (BLACK)	1	SEAF SWITCH TO MAIN BOARD
43	250 MM (GREEN)	1	LEAF SWITCH TO MAIN BOARD
44	370 MM (YELLOW)	1	"R" SPK "–" TO "L" SPK "–"
45	350 MM (BLACK)	1	LED "–" TO MAIN BOARD
46	380 MM (ORANGE)	1	"R" SPK "+" TO MAIN BOARD
	DOUBLE SHIELD WIRD # 28		
47	15 + 210 + 15 MM (BROWN)	1	FOR DECK HEAD
	SINGLE SHIELD WIRE #28		
48	15 + 260 + 15 MM (WHITE)	1	FOR CON. MIC.
	SCREW		
49	SELF-TAPPING SCREW TA/BY 2.6 X 8	1	LED PCB TO FRONT CAB. X 1
50	SELF-TAPPING SCREW TA/BH 2.3 X 10	1	RECORD BKT. X 1
51	MACHINE SCREW MS/BH 2.6 X 5	1	ADAPTOR TUNING TO PVC
52	SELF-TAPPING SCREW TA/BH 2.6 X 10	1	ANTENNA TO REAR CAB.
53	SELF-TAPPING SCREW TA/BH 3 X 10	4	TUNING KNOB TO FRONT CAB X 1
			DECK TO REAR CAB. X 3
54	SELF-TAPPING SCREW TA/PH 3 X 10	6	MAIN PCD TO REAR CAB.
55	SELF-TAPPING SCREW TA/PH 3 X 20	5	REAR CAB TO FRONT CAB
56	SELF-TAPPING SCREW TB/WH 2.6 X 8	2	VOL. KNOB BKT. TO REAR CAB. X 2
57	SELF-TAPPING SCREW T25/PH 3 X 8	2	AC SOCKET TO REAR CAB
58	SELF-TAPPING SCREW TB/WH 3 X 8	5	SPK. CLIP TO FRONT CAB. X 4
			GEAR DAMPER TO FRONT CAB. X 1
59	SELF-TAPPING SCREW TA/WH 3 X 12	2	TRANSFORMER TO REAR CAB.
	(HEAD o7.5 - 9 MM)		
60	METAL WASHER 3 X 8 X 0.5 MM	1	RECORDER BKT.

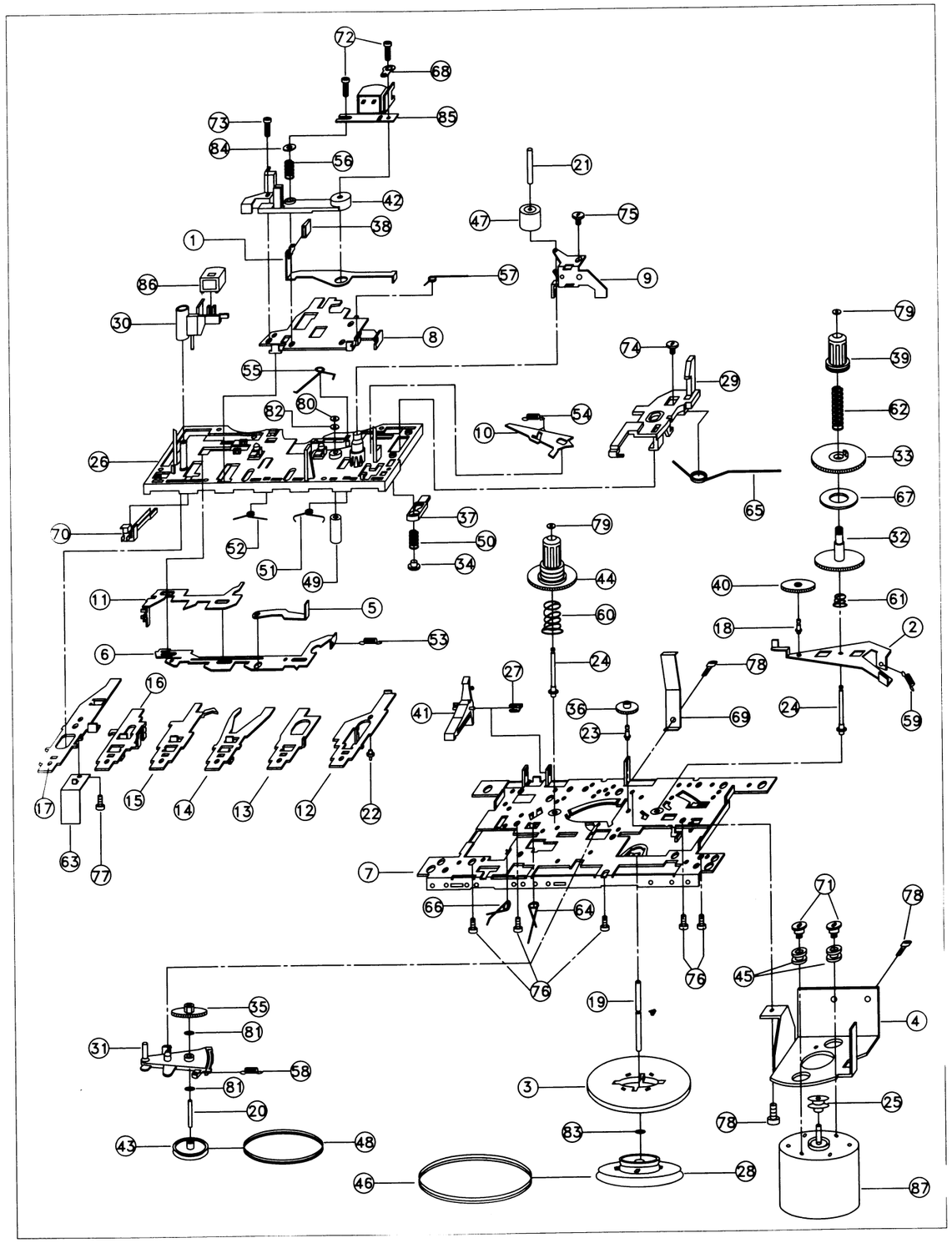
PART NO	DESCRIPTION	UNIT	PART LOCATION
61	METAL WASHER 3.2 X 10 X 0.5 MM	1	TUNING KNOB
62	CASS DOOR SPRING (o 0.8 MM)	1	
63	SOLDERING PLATE #3314	1	FOR FM ANT.
64	SPEAKER CLIP #110	4	FOR SPK. MTG.
65	RECORDING PLATE #RC-188	1	
66	SPONG 80 X 15 X 8 MM W/TAPE	1	FOR BATTERY DOOR
67	CABLE TIE	8	
68	RUBBER PAD 25 X 5 X 2 MM	1	FOR VOLUME BRACKET
	W/TAPE (25 X 5 MM)		

■ PACKING

PART NO	DESCRIPTION	UNIT	PART LOCATION
1	GIFT BOX	1	
2	I/B	1	
3	WARRANTY CARD	1	
4	SERIAL NO LABEL	2	
5	POLYBAG 230 X 500 MM	1	FOR MAIN UNIT
6	POJYBAG 90 X 200 MM	1	FOR LINE CORD
7	AC CORD SET	1	
8	POLYFOAM L & R	1	FOR MAIN UNIT
9	EXPORT CARTON		
10	RUBBER FOOT o7.5MM X 2 MM W/TAPE	4	FOR MAIN UNIT
11	POLYFOAM 20 X 20X 10 MM	1	FOR CASS. DOOR

12. MECHANISM EXPLODED VIEW AND LIST

■ CASSETTE DECK (PE-21V)



■ PART LIST

NO.	MATERIAL NO.	NAME	QUANTITY
1	121015-2	SENSING PLATE (11.6mm)	1
2	121016-1	TAKE UP GEAR PLATE (2.05mm)	1
3	121035-0	FLYWHEEL PLATE	1
4	121017-1	MOTOR BRACKET	1
5	121057-0	EJECT KICK LEVER	1
6	121068-0	BUTTON ACTUATOR PLATE	1
7	121082-3	MAIN CHASSIS (Dia. 2.1mm)	1
8	121138-0	HEAD PANEL (B) (3.8mm)	1
9	121039-0	PINCH ROLLER ARM	1
10	121140-0	AUTO STOP LEVER	1
11	121142-0	SWITCH ACTUATOR PLATE	1
12	121144-0	PAUSE BUTTON LEVER (V)	1
13	121145-0	STOP BUTTON LEVER (V)	1
14	121146-0	F.F BUTTON LEVER (V)	1
15	121147-0	REW. BUTTON LEVER (V)	1
16	121148-0	PLAY BUTTON LEVER (V)	1
17	121149-3	REC. BUTTON LEVER (V)	1
18	221003-0	IDLER SHAFT	1
19	221002-0	CAPSTAN SHAFT (32x29x11.4mm)	1
20	221003-0	RF. PULLEY SHAFT (1.5x11.1mm)	1
21	221007-0	PINCH ROLLER SHAFT (1.5x10mm)	1
22	221008-3	PAUSE PIN	1
23	221022-2	F.F. GEAR SHAFT	1
24	221032-0	REEL SHAFT (Dia. 2mm)	2
25	321018-0	MOTOR PULLEY (C)	1
26	321027-1	LEVER BASE	1
27	321025-0	REC. SAFETY LEVER STOPPER	1
28	321036-0	FLYWHEEL PULLEY (C)	1
29	321039-0	EJECT SLIDE LEVER (V)	1
30	321047-0	MG. ARM	1
31	312203-1	RF. PULLEY ARM	1
32	321104-1	REEL GEAR	1
33	321107-1	TAKE UP GEAR	1

NO.	MATERIAL NO.	NAME	QUANTITY
36	321111-0	F.F	1
37	321112-0	GEAR	1
38	321113-0	PAUSE CAM	1
39	321114-1	SENSING CAP	1
40	321115-0	REEL CAP	1
41	321116-0	IDLER GEAR	1
42	321118-0	REC. SHFETY LEVER	1
43	321129-0	HEAD BASE (M) (4.69 mm)	1
44	321130-0	SUPPLY REEL GEAR	1
45	421002-0	MOTOR CUSHION	2
46	421003-0	FLYWHEEL HOUSING (45x1x1mm)	1
47	421004-0	PINCH ROLLER (Dia)	1
48	421015-0	RF. BELT (34x0.8x8mm)	1
49	521001-0	FLYWHEEL HOUSING (2x4.5x10mm)	1
50	621002-0	PAUSE CAM SPRING	1
51	621002-0	BUTTON LEVER SPRING (A)	1
52	321003-2	BUTTON LEVER SPRING (B)	1
53	621006-0	BUTTON ACTUATOR PLATE SPRING	1
54	621007-0	AUTO STOP LEVER SPRING	1
55	621010-0	HEAD PANEL SPRING	1
56	621011-0	AZIMUTH SPRING	1
57	621012-0	PINCH ROLLER SPRING	1
58	621013-2	RF. ARM SPRING	1
59	621014-0	TAKE GEAR PLATE SPRING	1
60	621015-1	BACK TENSION SPRING (L)	1
61	621017-0	BACK TENSION SPRING (R)	1
62	621018-2	TAKE UP REEL SPRING	1
63	621031-0	REC. SPRING PLATE (14mm)	1
64	621054-1	REC. LEVER SPRING	1
65	621054-1	EJECT LEVER SPRING	1
66	621056-0	PLAY/SW. ACTUATOR PLATE SPRING	1
67	721001-0	TAKE-UP REES RELT (16x8x0.8mm)	1
68	821028-0	LUG	1
34	321109-0	PAUSE CAM STOPPER	1
35	321110-0	RF. GEAR	1

NO.	MATERIAL NO.	NAME	QUANTITY
69	921040-0	PACK SPRING (V)	1
70	MSW-2106	LEAF SWITCH	1
71	SCL-2640	MOTOR COLLAR SCREW (2.6x4mm)	2
72	SCP-2070	+/- CAP SCREW (2x7mm)	2
73	SISO-2060	ISO SCREW (2x6mm)	1
74	SPTP-2030	P. TAPPING SCREW (2x3mm)	1
75	SPTP-2035	P. TAPPING SCREW (2x3.5mm)	1
76	STP-2050	P. TAPPING BIND SCREW (2x5m)	5
77	STT-2030	C. TAPPING SCREW (2x3mm)	1
78	STT-2040	C. TAPPING SCREW (2x5mm)	3
79	WP-123004-C	POLYSLIDE WASHER (1.2x3x0.4mm CUt)	2
80	WP-163805-C	OIL STOP WASHER (1.6x3.8x0.5mm CUt)	1
81	WP-1640013	POLYSLIDE WASHER (1.6x4x0.13mm)	2
82	WP-2138025	POLYSLIDE WASHER (2.1x4x0.4mm)	1
83	WN-214004	NYLON WASHER (2.1x4x0.4mm)	1
84	WPL-215004	PLAN WASHER (2.1x5x0.4mm)	1
85		R/P HEAD	1
86		E HEAD	1
87		MOTOR	1